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B4350/B4350n
Service Manual

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PREFACE

This Maintenance Manual describes the field maintenance methods for B4350 Monochrome LED Page Printers.

This manual is written for use by service persons. Please note that you should refer to the Printer Handbook for the handling and operating methods of the equipment.

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1. CONFIGURATION

1.1 System Configuration

B4350 consists of control and engine blocks in the standard configuration, as shown in Figure 1-1.

In addition, the options marked with asterisk(*) are available.

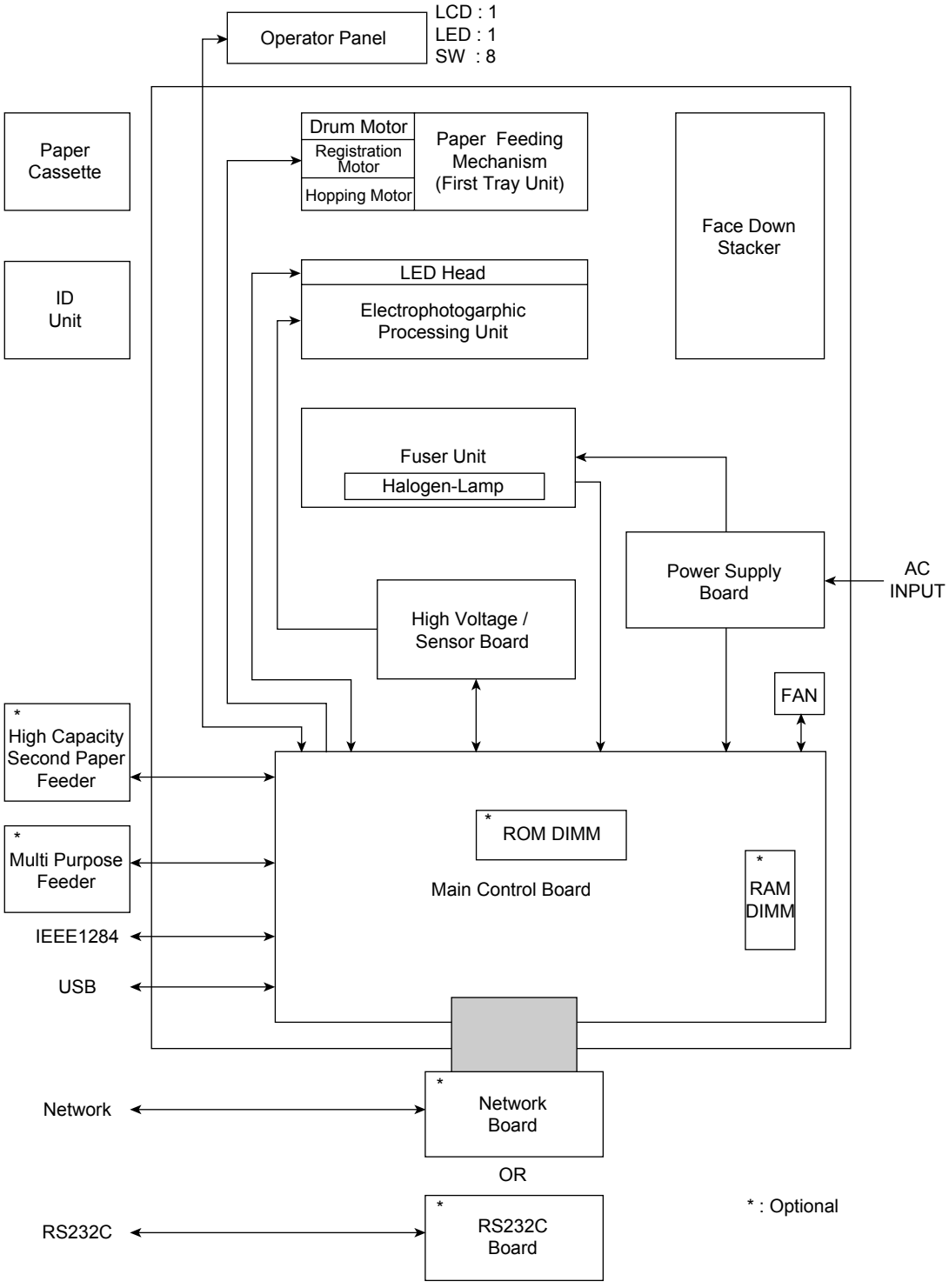


Figure 1-1

1.2 Printer Configuration

The printer unit consists of the following hardware components:

- Electrophotographic Processor
- Paper Feeder
- Controller
- Operator Panel
- Power Supply Unit

The printer unit configuration is shown in Figure 1-2.

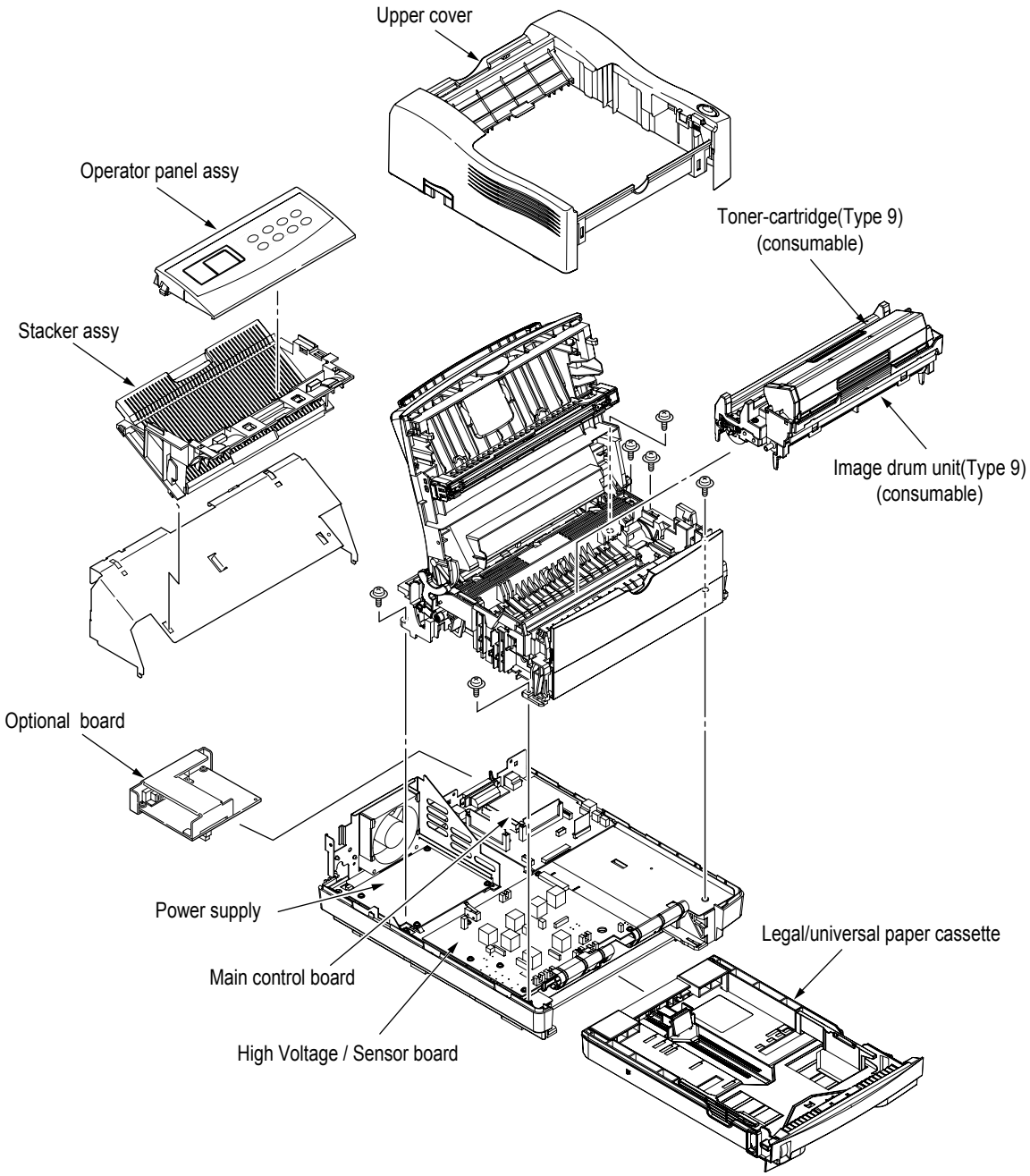
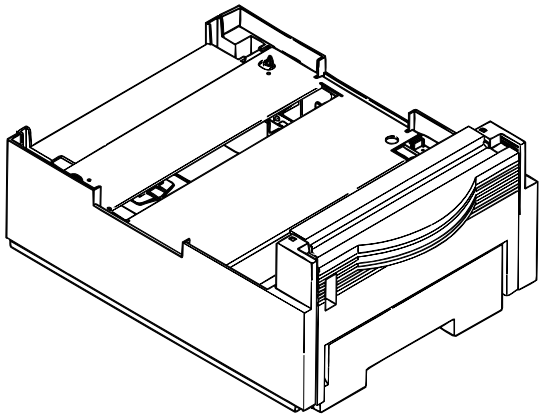


Figure 1-2

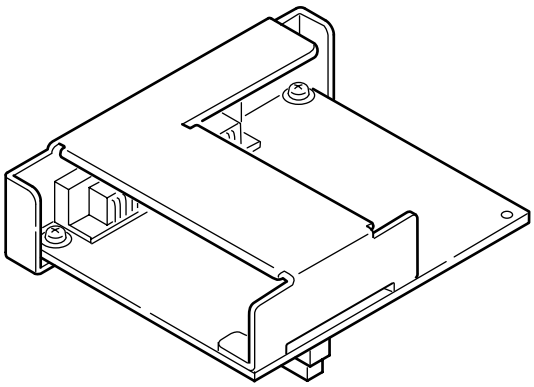
1.3 Optional Configuration

The options shown below are available for use with B4350. These are available separately from the printer unit.

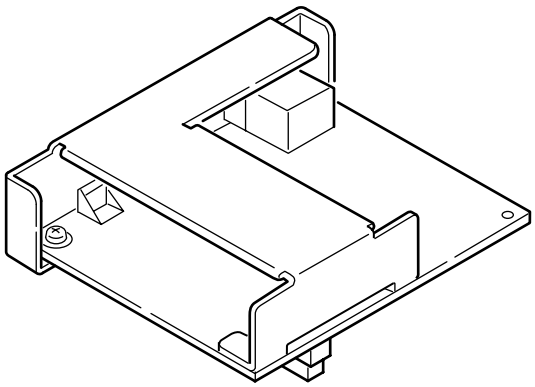
(1) High Capacity Second Paper Feeder



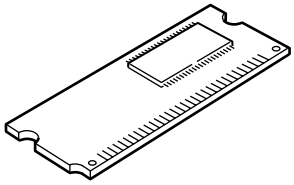
(3) RS-232C Serial Interface Board



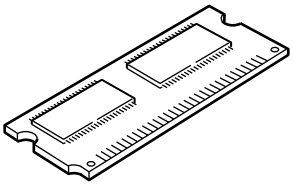
(4) Network Interface Board(Soft NIC CARD)



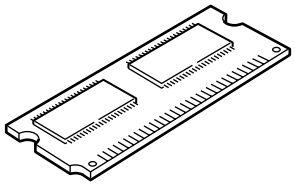
(5) SDRAM DIMM



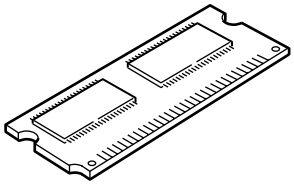
(i) 16MB



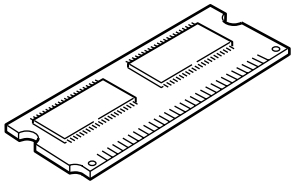
(ii) 32MB



(iii) 64MB

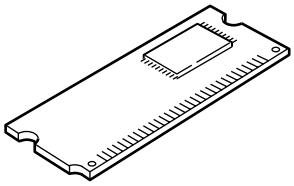


(iv) 128MB

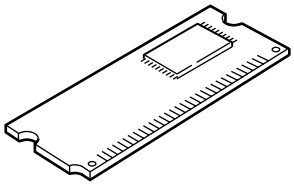


(v) 256MB

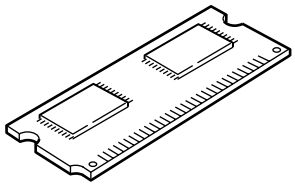
(6) Flash DIMM



(i) 1MB

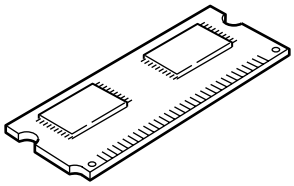


(ii) 8MB



(iii) 16MB

(7) Postscript 3 Emulation DIMM



1.4 Specification

(1) Type: Desktop

(2) External dimensions:
Height 8.5” (215 mm)
Width 14.0” (355 mm)
Depth 15.7” (400 mm)

(3) Weight: Approx. 9 kg

(4) Developing method: Dry electrophotography
Exposing method: LED stationary head

(5) Paper used

<Type>
- Standard paper
  – Xerox 4200 (20 lbs)
- Application paper (manual face-up feed)
  – Label
  – Envelope
  – OHP paper (transparency)

<Size>
- Standard sizes
  – Letter
  – Legal* [* Without Multi Purpose Feeder (Option)]
  – Legal-13*
  – Executive
  – COM-9 **
  – COM-10** [** manual feed and Multi Purpose Feeder
  – Monarch** (option) only]
  – DL**
  – C5**
  – A4
  – A5
  – B5 (JIS)
  – A6
- Applicable sizes
  – Width : 3.5” to 8.5” (90 to 216 mm)
  – Length : 5.8” to 14” (148 to 355.6 mm)

<Thickness>
  – Automatic feed : 16 to 28 lbs (60 to 105 g/m^2)
  – Manual feed : Label, OHP paper (transparency)
    Envelope (24 to 28 lbs)

(6) Printing speed

Continuous printing : 23 pages per minute with Letter size paper.
22 pages per minute with A4 size paper.
[Except, Multi purpose Feeder (14ppm) with Letter size paper]

Warm-up time : 35 seconds typical at room temperature [68 F (20 C), AC 120/230 V].

First page print time : 6.0 seconds typical for the Letter size paper (6.2 seconds for the A4 size) after warm-up.

(7) Paper feeding method: Automatic feed or manual feed

(8) Paper delivery method: Face down/face up

(9) Resolution:
600 × 600 dots/inch
600 × 1200 dots/inch

(10) Power input

110~127 VAC ± 10%
220~240 VAC ± 10%

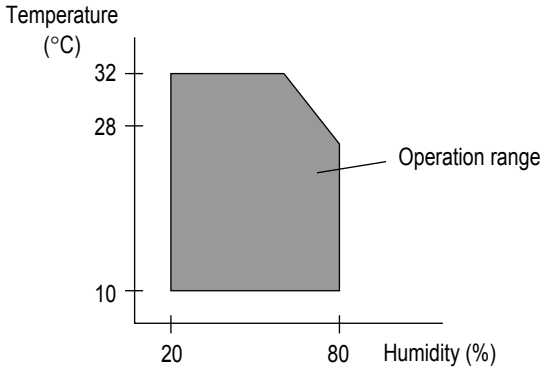
(11) Power consumption

		120VAC	230VAC
Peak	:	Approx. 700W	Approx. 700W
Typical operation	:	Approx. 360W	Approx. 360W
Idle	:	Approx. 68W	Approx. 66W
Power save mode (Without option)	:	Approx. 9W	Approx. 10W
Power save mode (With full option)	:	Approx. 13W	Approx. 14W

(12) Temperature and humidity

	In operation	Power off mode	During Storage	Unit
Temperature	50-90 (10-32)	32-110 (0-43)	14-110 (–10-43)	°F (°C)
Humidity	20-80	10-90	10-90	%RH
Maximum wet bulb temperature	77 (25)	80.4 (26.8)	———	°F (°C)
Minimum diference between wet and dry bulb temperatures	35.6 (2)	35.6 (2)	———	°F (°C)

1. Storage conditions specified above apply to printers in packed condition.
2. Temperature and humidity must be in the range where no condensation occurs.



(13) Noise

During operation	:	53 dB (A) or less
Standby	:	38 dB (A) or less
Quiet mode	:	Back ground level

(14) Consumables

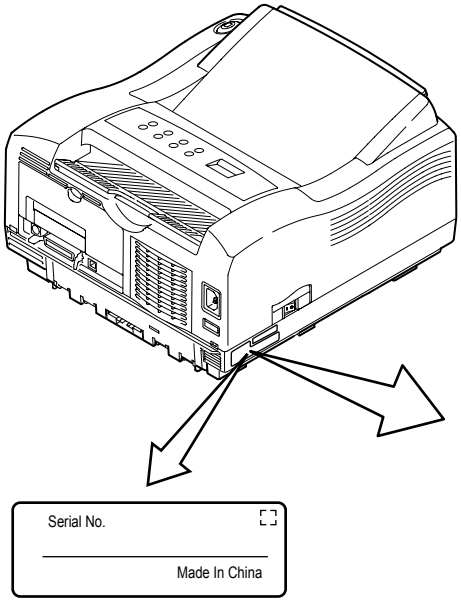
Toner cartridge kit: 2,500 (5% duty) 6,000 (Optional 6K Toner 5% duty)

Image drum cartridge: 25,000 (at continuouts printing)
17,000 (3 page/job) without Power Save
11,000 (1 page/job) without Power Save
7,000 (1 page/job) with Power Save
(Minimum)

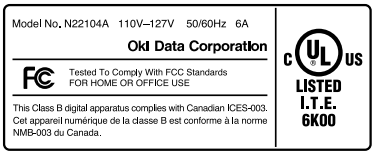
1.5 Safety Standards

1.5.1 Certification Label

The safety certification label is affixed to the printer in the position described below.



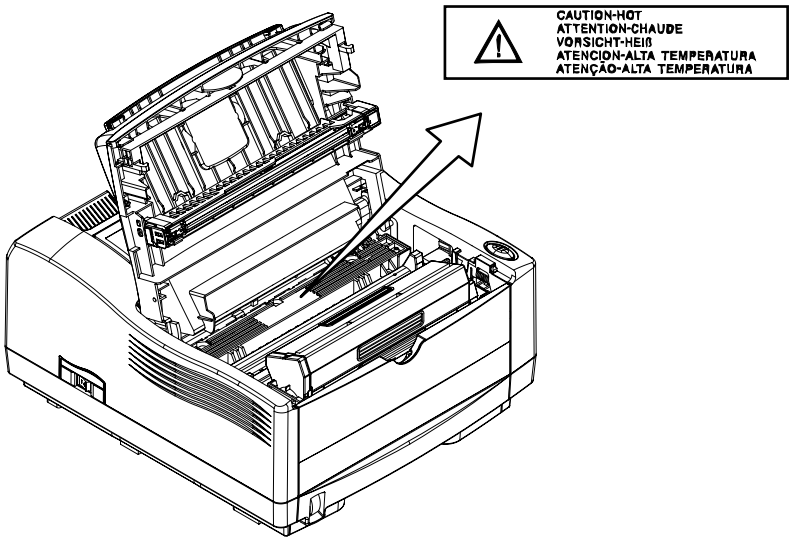
ODA AC : 120V model


Model No. N22104A 110V–127V 50/60Hz 6A
Oki Data Corporation
Tested To Comply With FCC Standards
FOR HOME OR OFFICE USE
This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.
c UL us
LISTED
I.T.E.
6K00

1.5.2 Warning Label

The warning labels are affixed to the sections which may cause bodily injury.

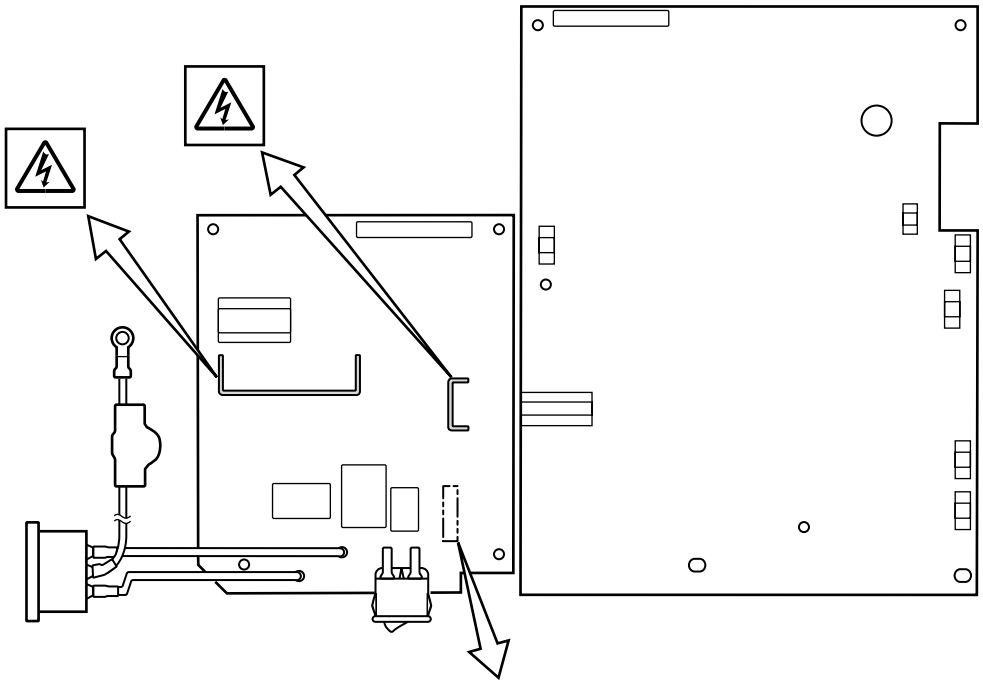
Follow the instructions on warning labels during maintenance.



1.5.3 Warning/Caution Marking

The following warning and caution markings are made on the power supply/sensor board.

CAUTION



ENGLISH

Heatsink and transformer core present risk of electric shock. Test before touching.

2. PARTS REPLACEMENT

The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the disassembly procedures are explained here. For reassembly, reverse the disassembly procedure.

2.1 Precautions for Parts Replacement

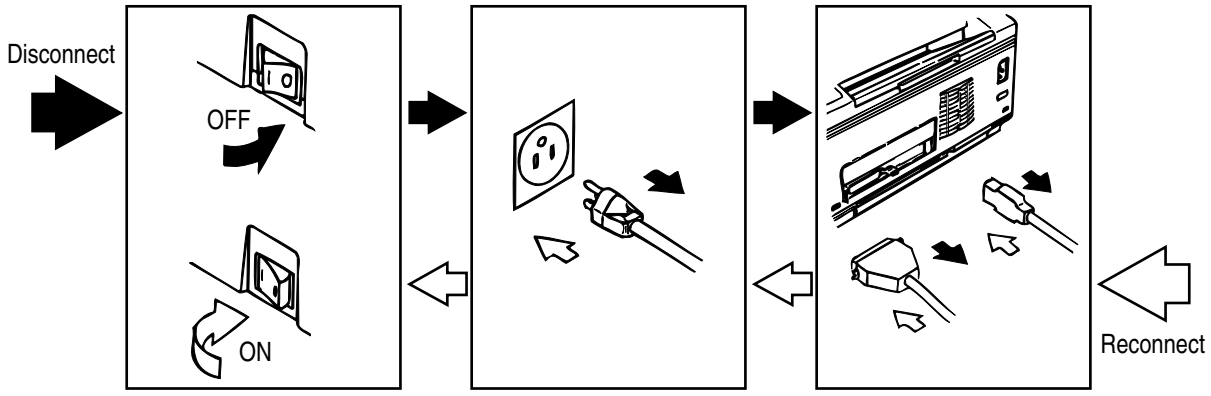
(1) Before starting to replace parts, remove the AC cord and interface cable.

(a) Remove the AC cord in the following sequence:

i) Turn off (“o”) the power switch of the printer
ii) Disconnect the AC inlet plug of the AC cord from the AC receptacle.
iii) Disconnect the AC cord and interface cable from the printer.

(b) Reconnect the printer in the following procedure.

i) Connect the AC cord and interface cable to the printer.
ii) Connect the AC inlet plug to the AC receptacle.
iii) Turn on (“I”) the power switch of the printer.



(2) Do not disassemble the printer as long as it is operating normally.

(3) Do not remove parts which do not have to be touched; try to keep the disassembly to a minimum.

(4) Use specified service tools.

(5) When disassembling, follow the laid out sequences. Parts may be damaged if these sequences are not followed.

(6) Since screws, collars and other small parts are likely to be lost, they should temporarily be attached to the original positions during disassembly.

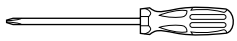
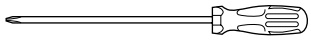
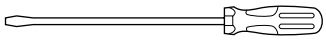
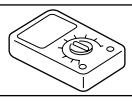
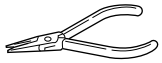
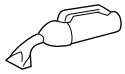
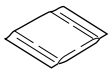
(7) When handling IC’s such as microprocessors, ROMs and RAMs, or circuit boards, do not wear gloves that are likely to generate static electricity.

(8) Do not place printed circuit boards directly on the equipment or floor.

[Service Tools]

The tools required for field replacement of printed circuit boards, assemblies and units are listed in Table 2-1.

Table 2-1 Service Tools

No.	Service Tools		Q' ty	Application	Remarks
1		No. 1-100 Philips screwdriver	1	2~2.5 mm screws	
2		No. 2-100 Philips screwdriver	1	3~5 mm screws	
3		No. 3-100 screwdriver	1		
4		No. 5-200 screwdriver	1		
5		Digital multimeter	1		
6		Pliers	1		
7		Handy cleaner	1		
8		LED Head cleaner	1	Cleans LED head	

2.2 Parts Layout

This section explains the layout of main components of the equipment.

[Lower base unit]

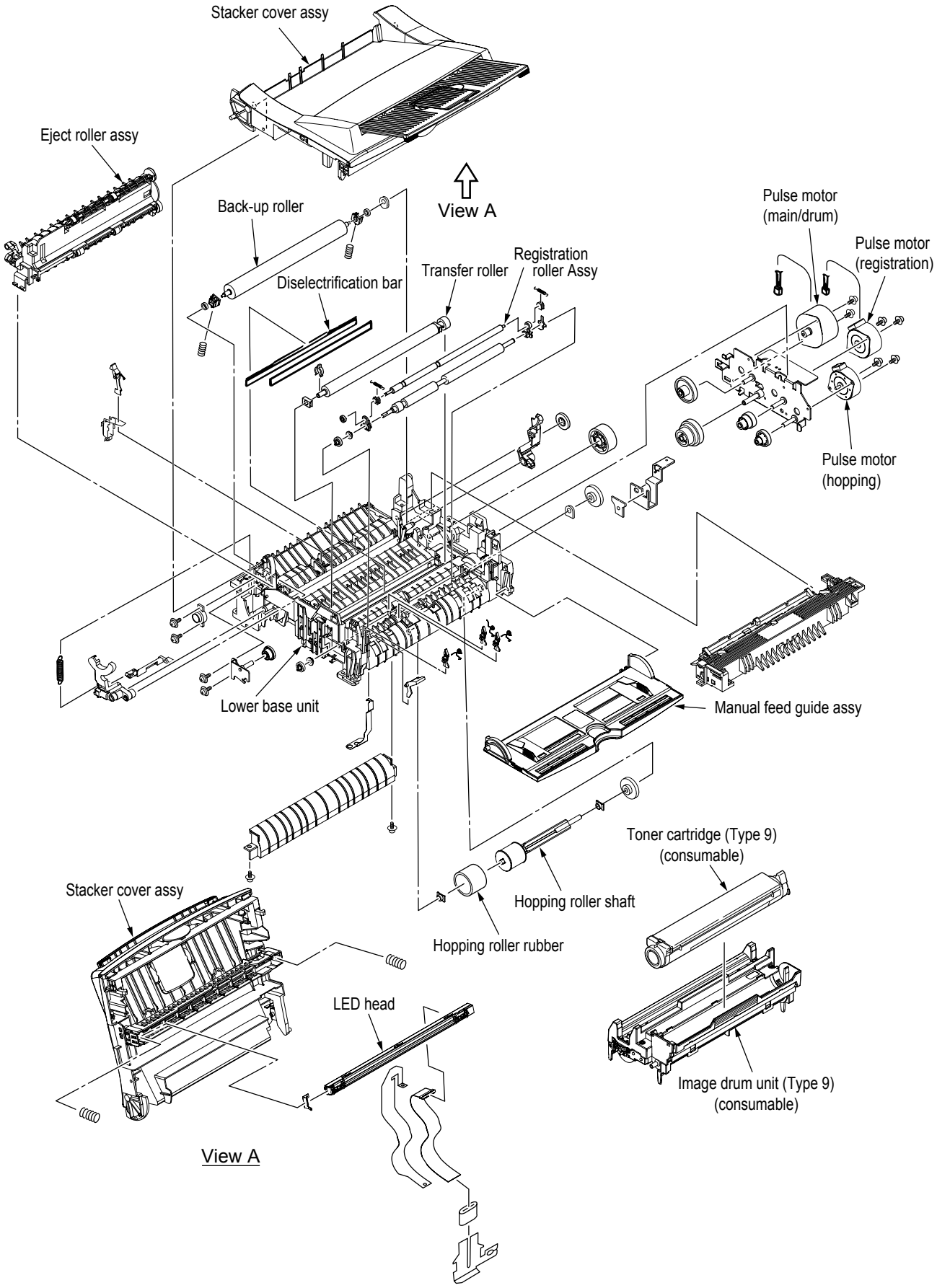


Figure 2-1

[Upper cover unit]

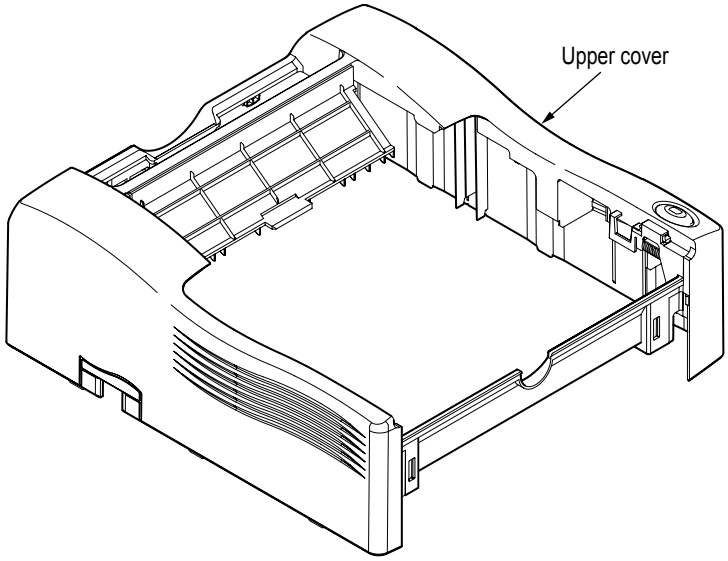


Figure 2-2

[Base unit]

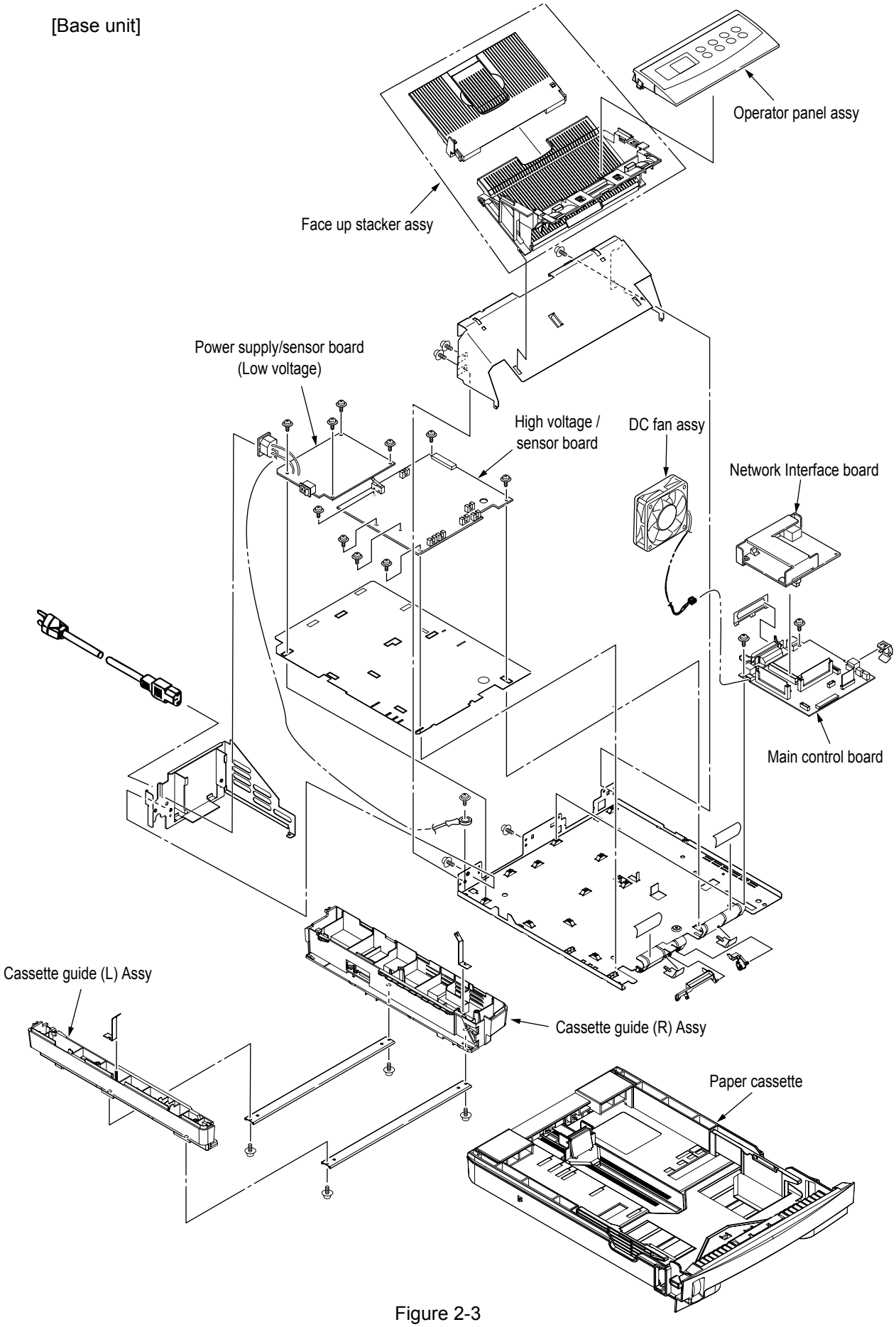
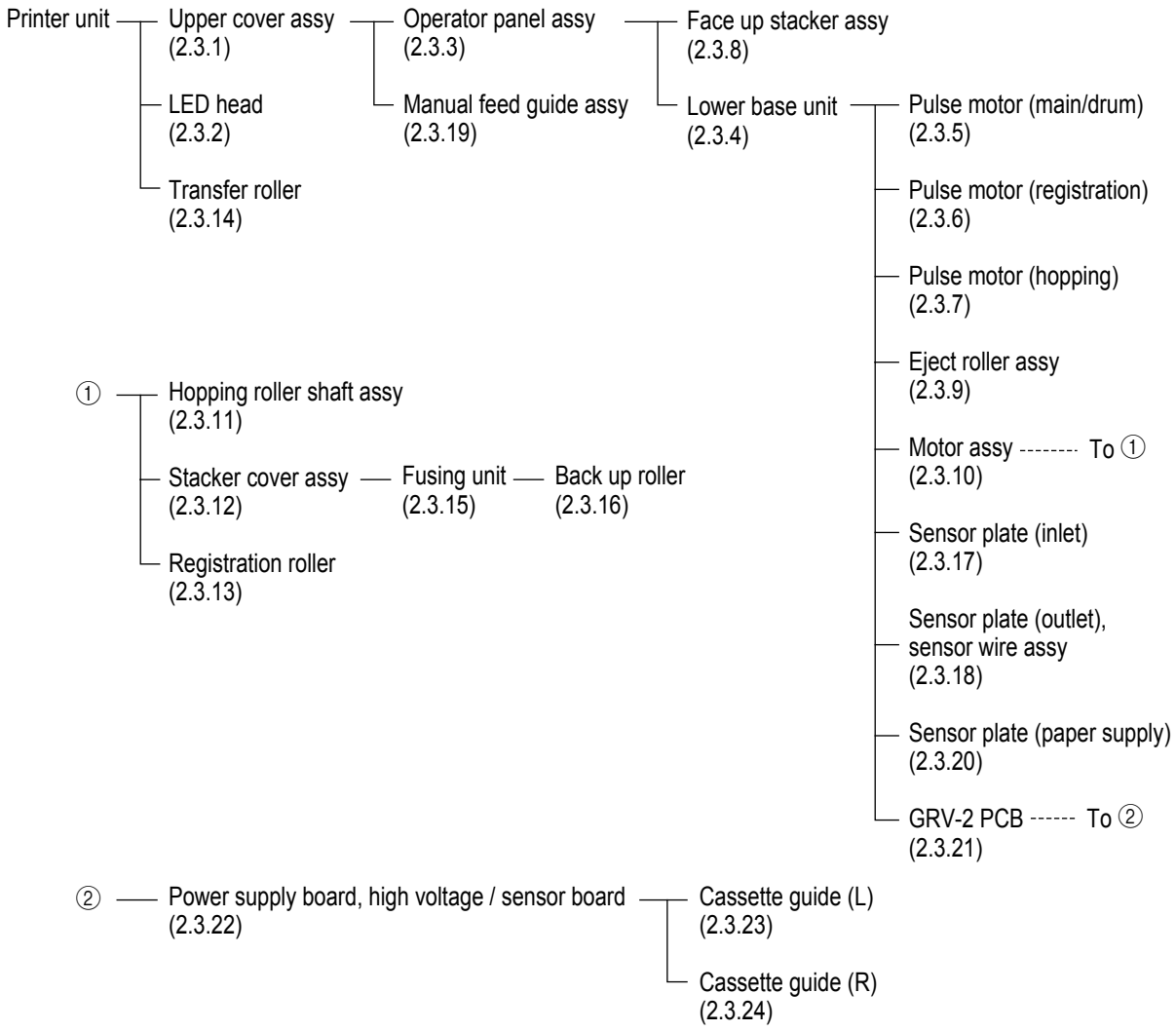


Figure 2-3

2.3 How to Change Parts

This section explains how to change parts and assemblies listed in the disassembly diagram below.

In the parts replacement procedure, those parts marked with the part number inside ● with white letters are RSPL parts.



2.3.1 Upper Cover Assy

(1) With the power switch turned off, unplug the AC power cord from the outlet.

(2) Disconnect the interface cable ①.

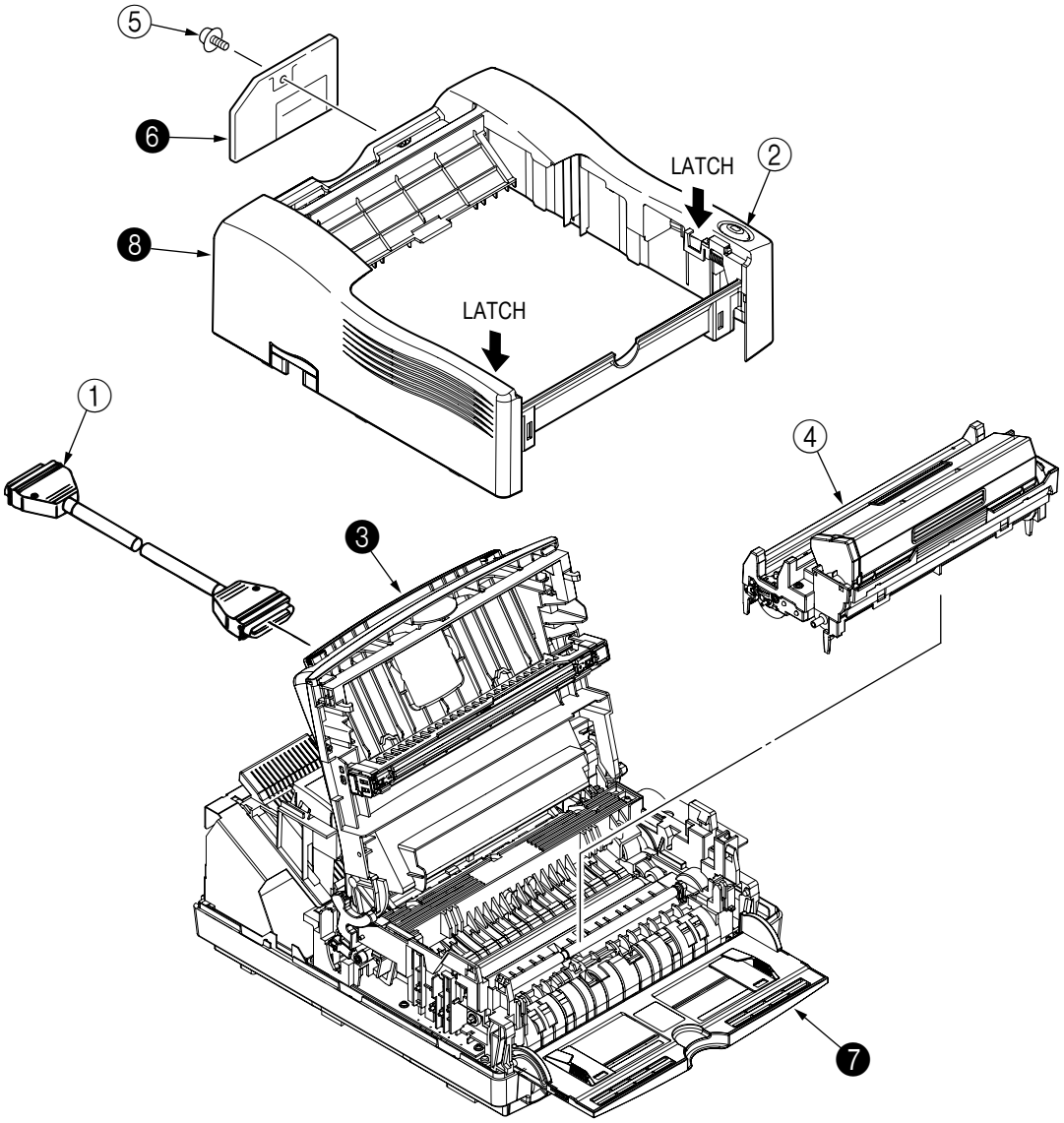
(3) Press the button ② on right side of the Upper cover and open the stacker cover assy ❸.

(4) Take out the image drum unit ④.

(5) Remove one screw ⑤, and remove the I/F cover ❻ from the back side of the printer.

(6) Open the manual feed guide assy ❼. Unlock the latches at two locations on the front side. Lift the front side of the upper cover ❽ up and unlock the latches at two locations on the back side. Lift and remove the upper cover assy ❽.

Note : When removing or reinstalling the upper cover, be careful not to get the motor cables tangled or caught.



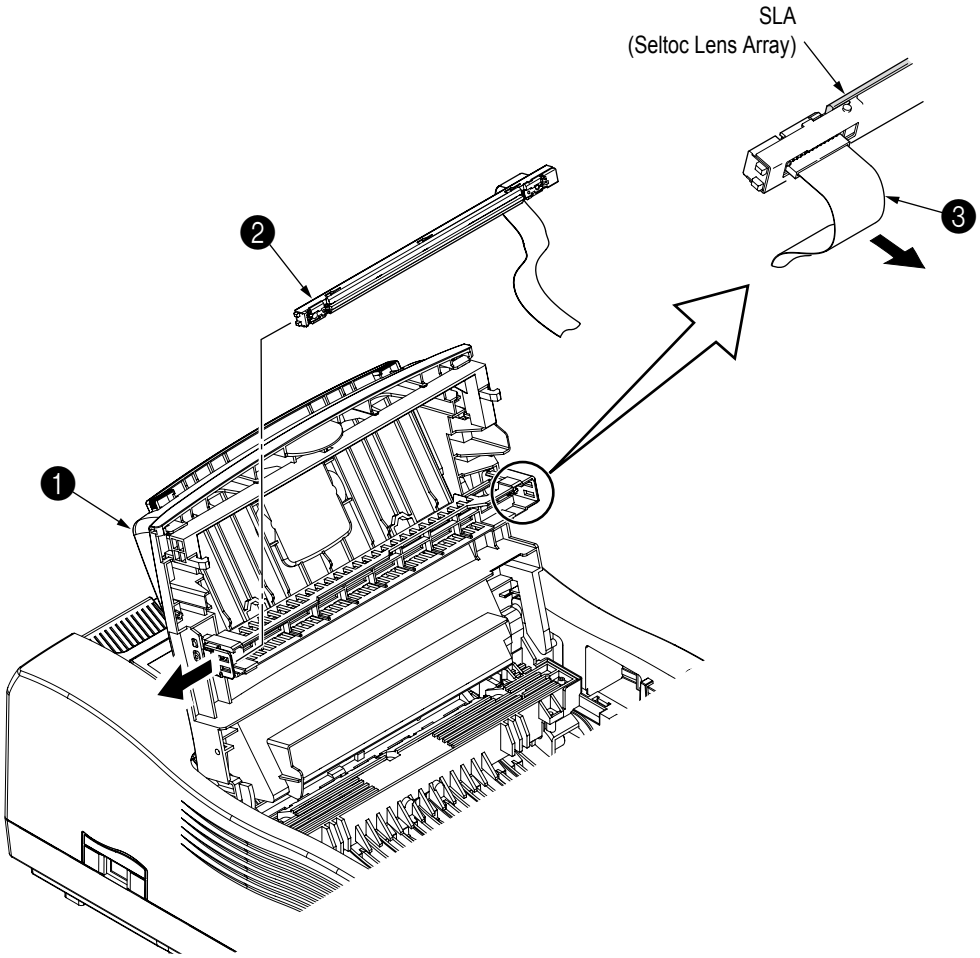
2.3.2 LED Head

(1) Press the button on right side of the upper cover and open the stacker cover assy ❶.

(2) Open the hook section on the left side of the head holder and remove the LED head ❷.

(3) Remove the head cable ❸ from the head connector.

Note: Be sure not to touch directly or push on the SLA part of the LED head.

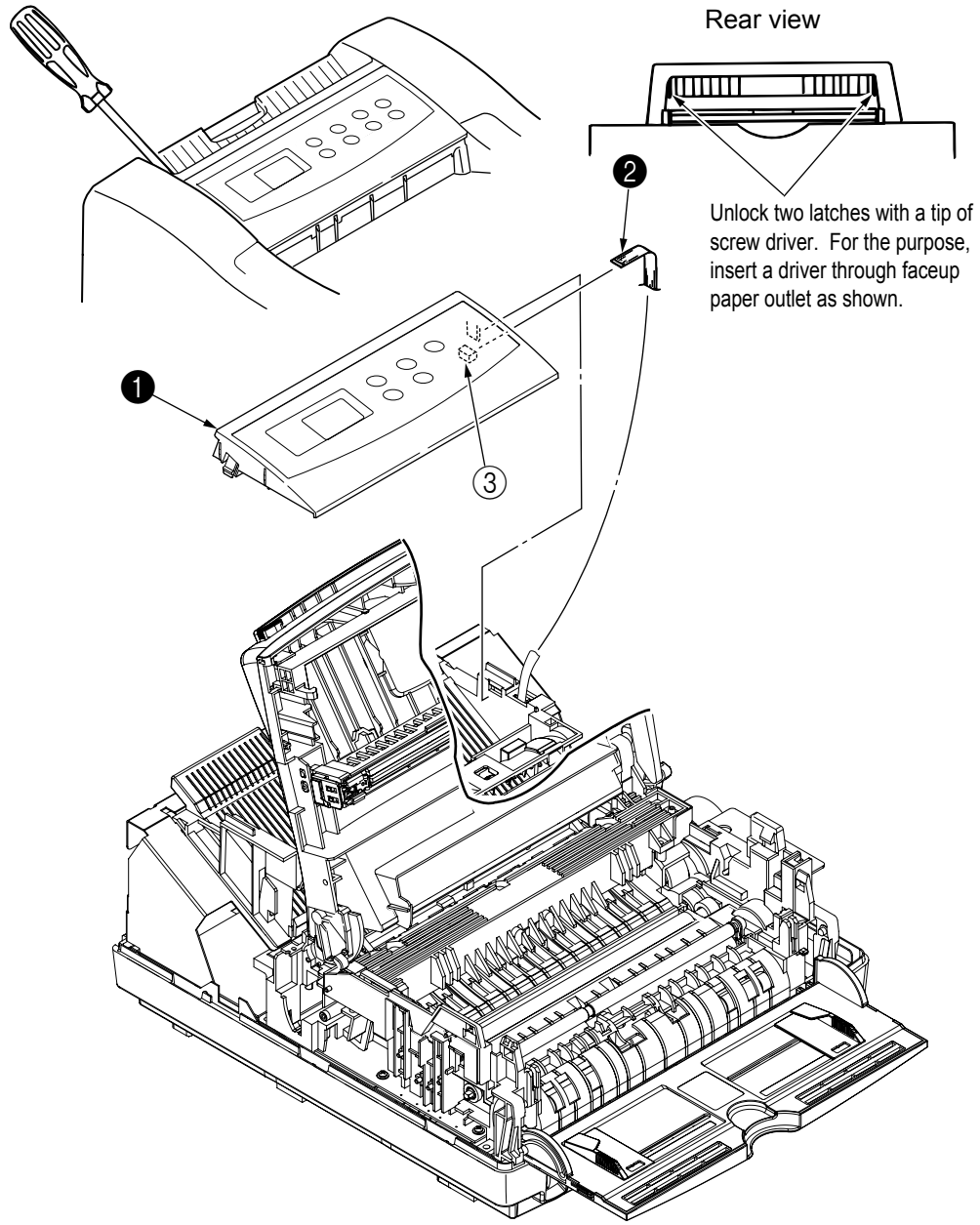


2.3.3 Operator Panel Assy

(1) Unlock two latches on the upper cover from the rear side, lift the operator panel assy ❶ from the back and remove it.

(2) Remove the Sumi card (operator panel) ❷ from the connector (CN1) ③.

Note : You can remove the operator panel assy while the upper cover installed on the unit. However, it is much easier to remove the panel assy after removal of upper cover.


Rear view
❷
Unlock two latches with a tip of screw driver. For the purpose, insert a driver through faceup paper outlet as shown.
❶
③

2.3.4 Lower Base Unit

(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.7).

(4) Remove the transfer roller assy (see 2.3.14).

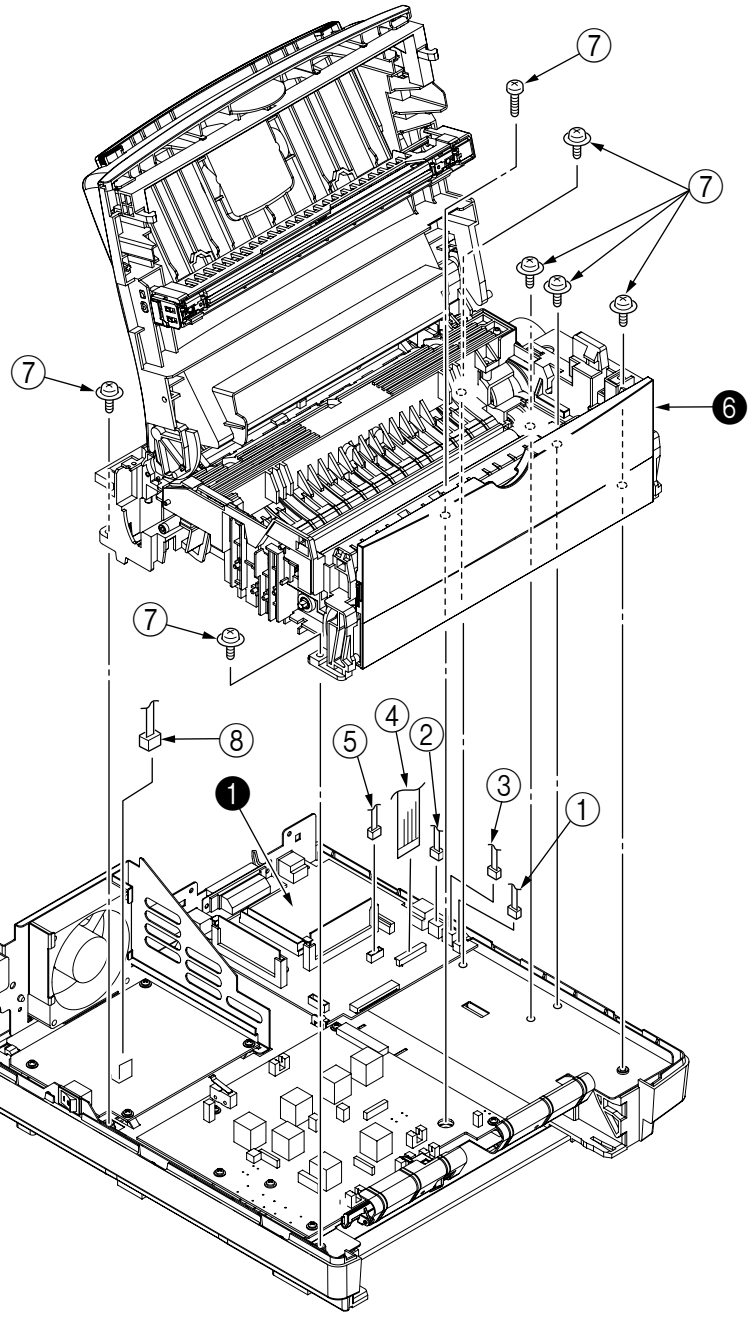
(5) Remove the connecting cables ①, ② and ③ of the pulse motors from the connectors (DM, RM, HM) of the GRV-2 PCB ❶.

(6) Remove the LED head cables ④ from the connector (HEAD).

(7) Remove the Thermistor cable 5 from the connector (THERM).

(8) Remove the connecting cable ⑧ of the heater from the connector (CN2).

(9) Open the manual feed guide assy, remove seven screws ⑦, then remove the lower base unit ❻.

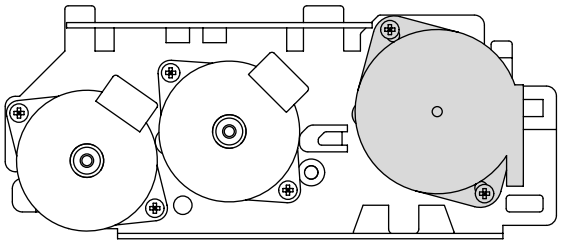


2.3.5 Pulse Motor (Main/Drum)

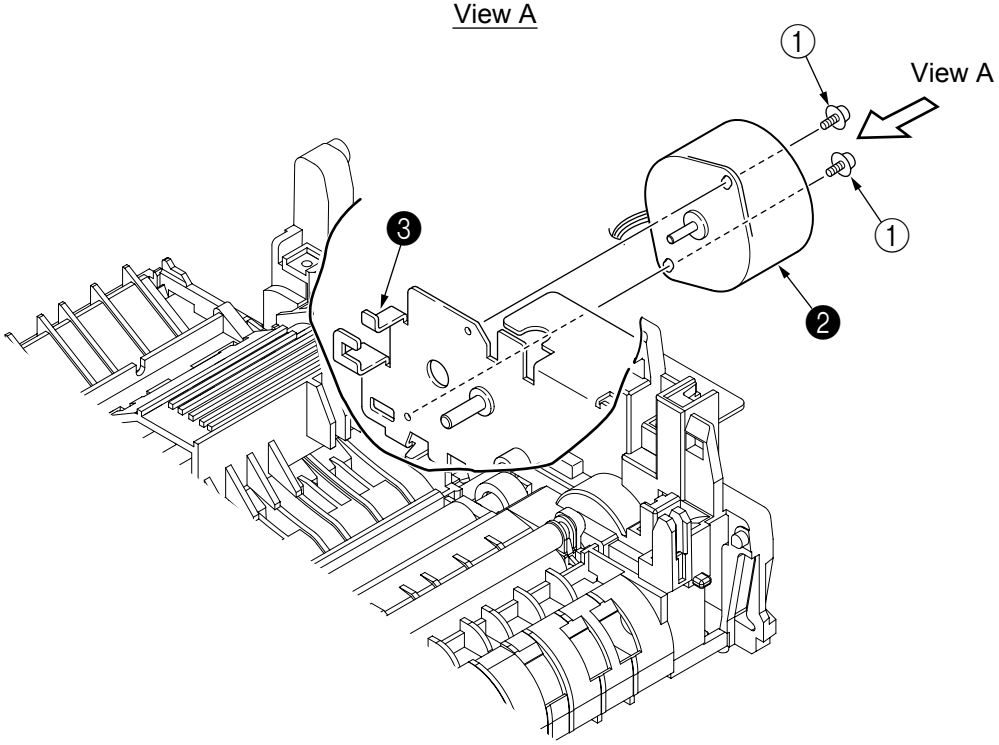
(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the lower base unit (see 2.3.4).

(3) Remove two screws ① and remove the pulse motor (main/drum) ❷ from the motor bracket ❸.



View A

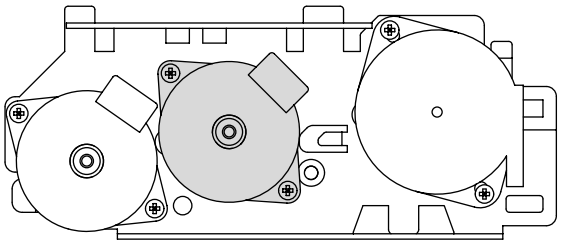


2.3.6 Pulse Motor (Registration)

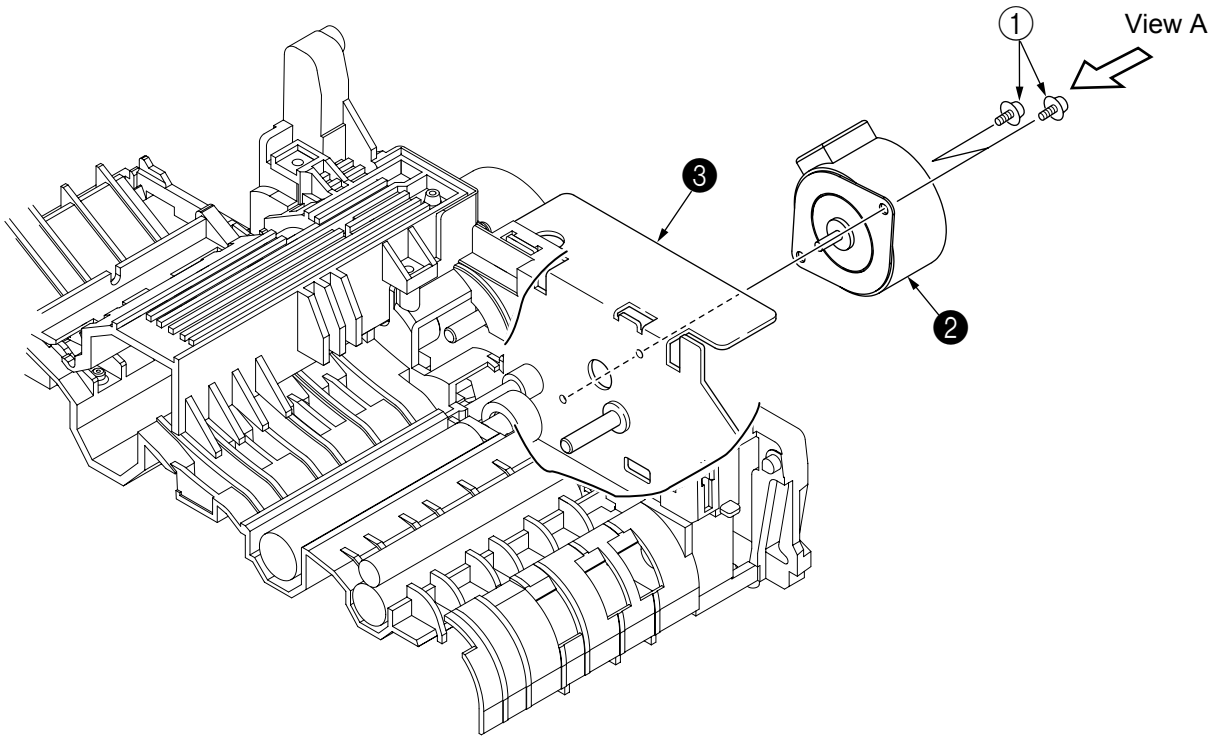
(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the lower base unit (see 2.3.4).

(3) Remove two screws ① and remove the pulse motor (registration) ❷ from the motor bracket ❸.



View A

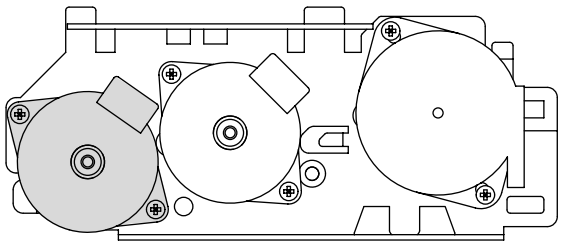


2.3.7 Pulse Motor (Hopping)

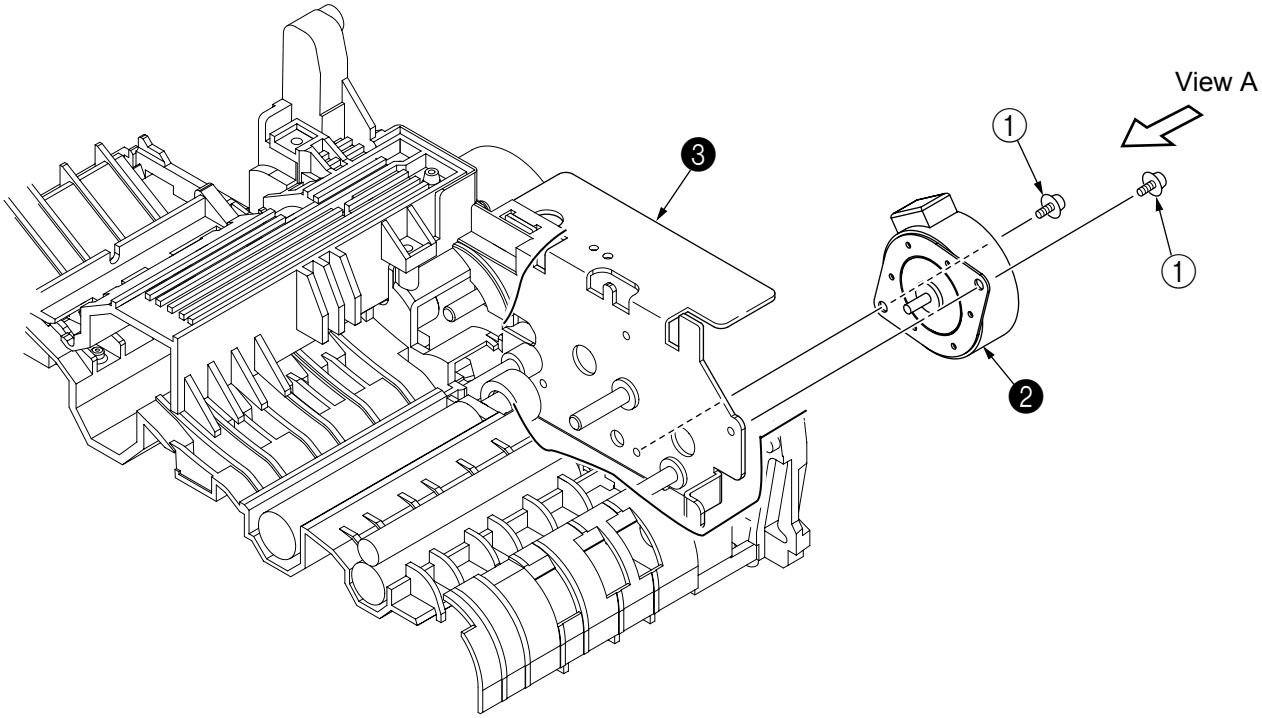
(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the lower base unit (see 2.3.4).

(3) Remove two screws ① and remove the pulse motor (hopping) ❷ from the motor bracket ❸.



View A



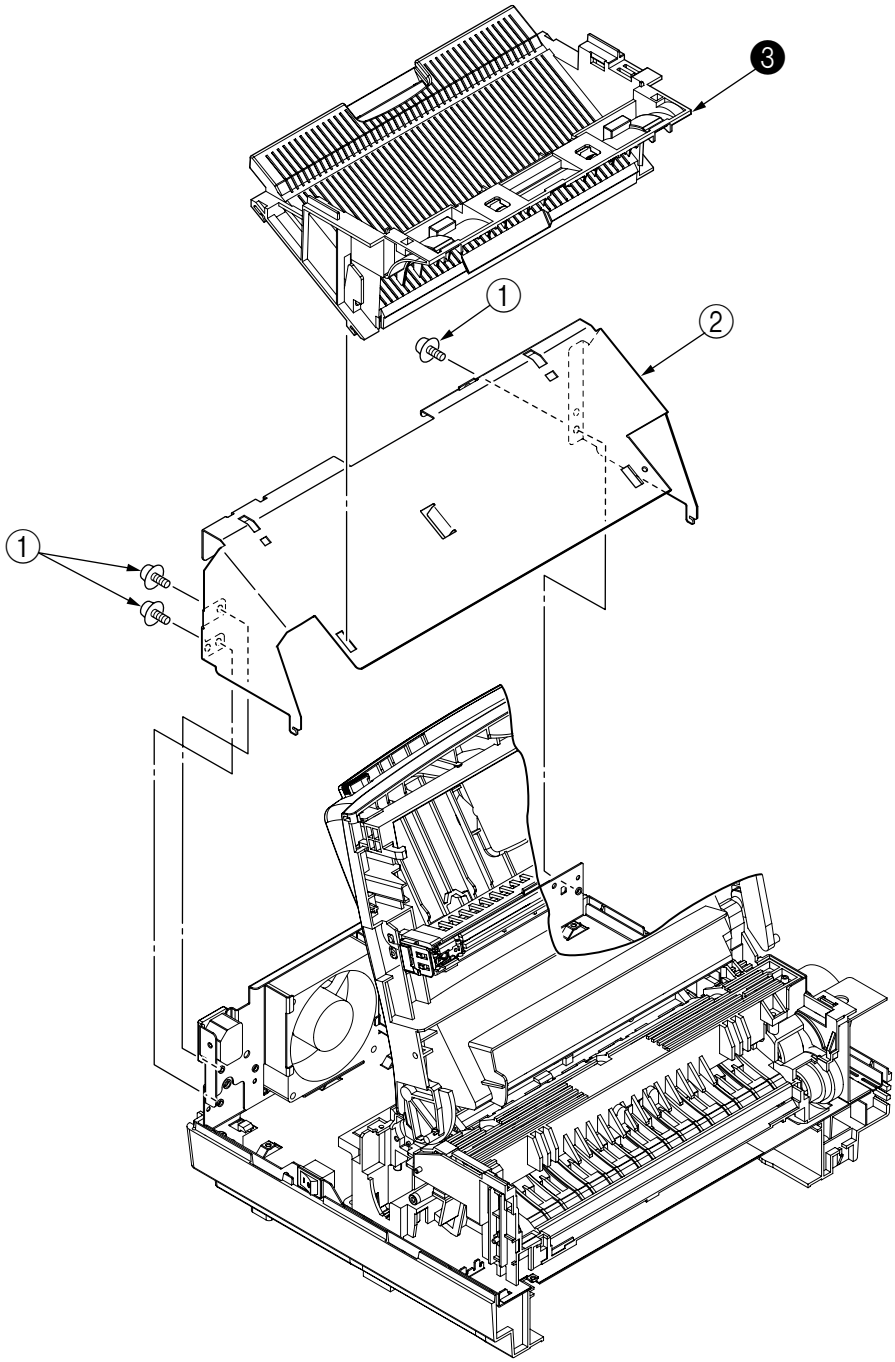
2.3.8 Face Up Stacker Assy

(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove three screws ① and remove both the shield plate ② and face up stacker ❸ together.

(4) Unlock the latches at two locations, and remove the face up stacker ❸.



2.3.9 Eject Roller Assy

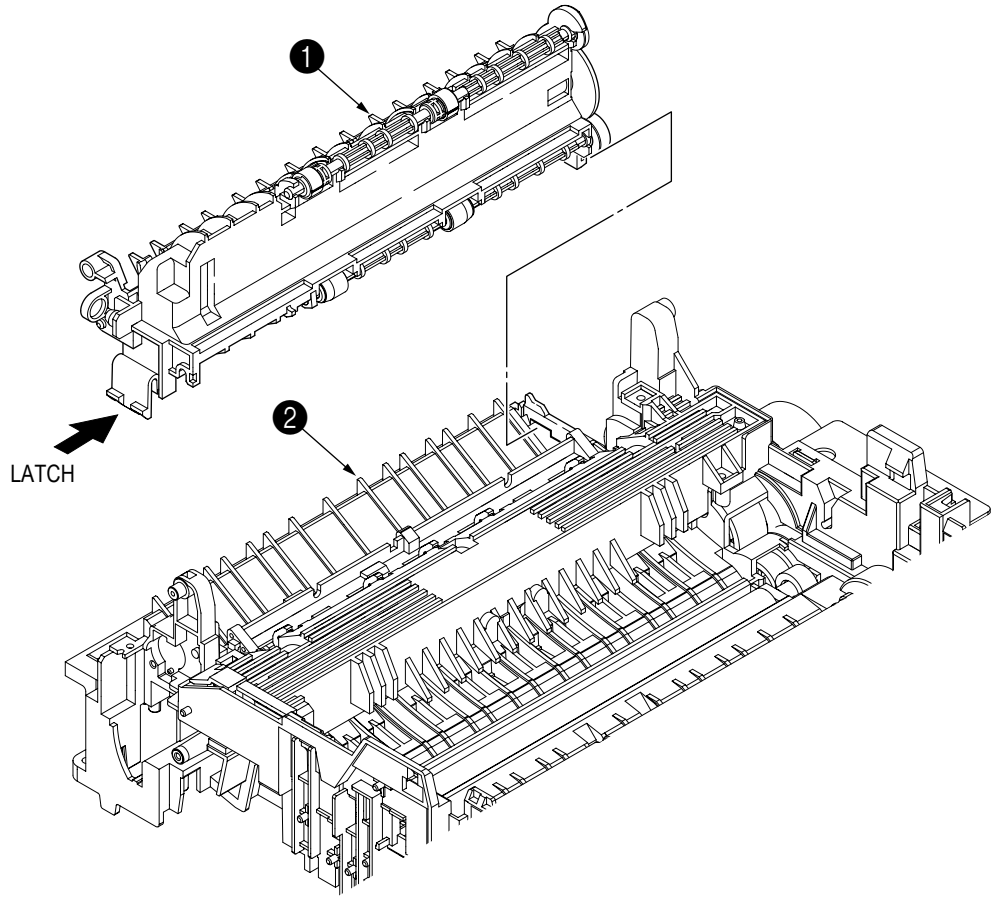
(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the stacker cover assy (see 2.3.12).

(5) Disengage the eject roller assy ❶ from the lower base ❷ by pressing the latch section of the eject roller assy ❶ in the direction of the arrow shown below, and remove the eject roller assy ❶.



2.3.10 Motor Assy

(1) Remove the upper cover assy (see 2.3.1).

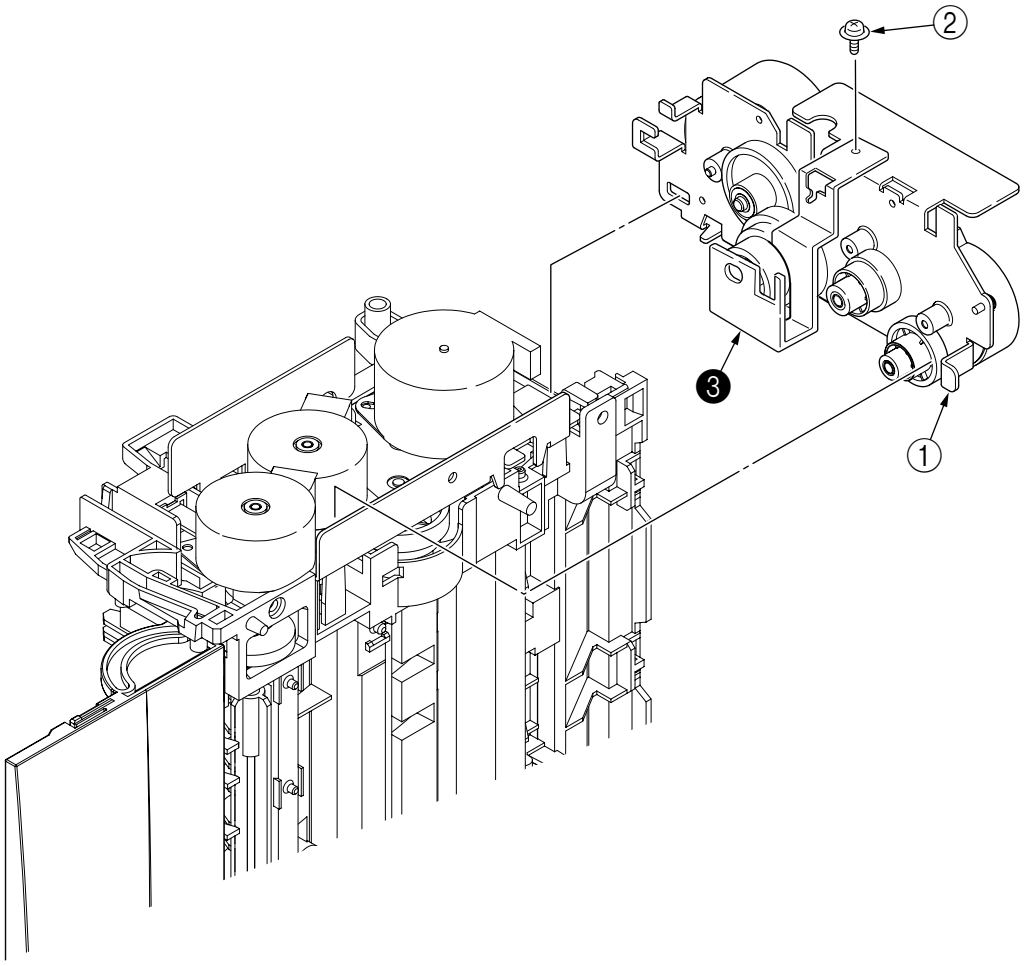
(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

(5) Stand the lower base unit on its side as shown, and unlock two latches, then remove the motor assy ①.

(6) Remove screw ② and remove the bracket-Motor-Sub ❸ from the Motor bracket.



2.3.11 Hopping Roller Shaft Assy

(1) Remove the upper cover (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

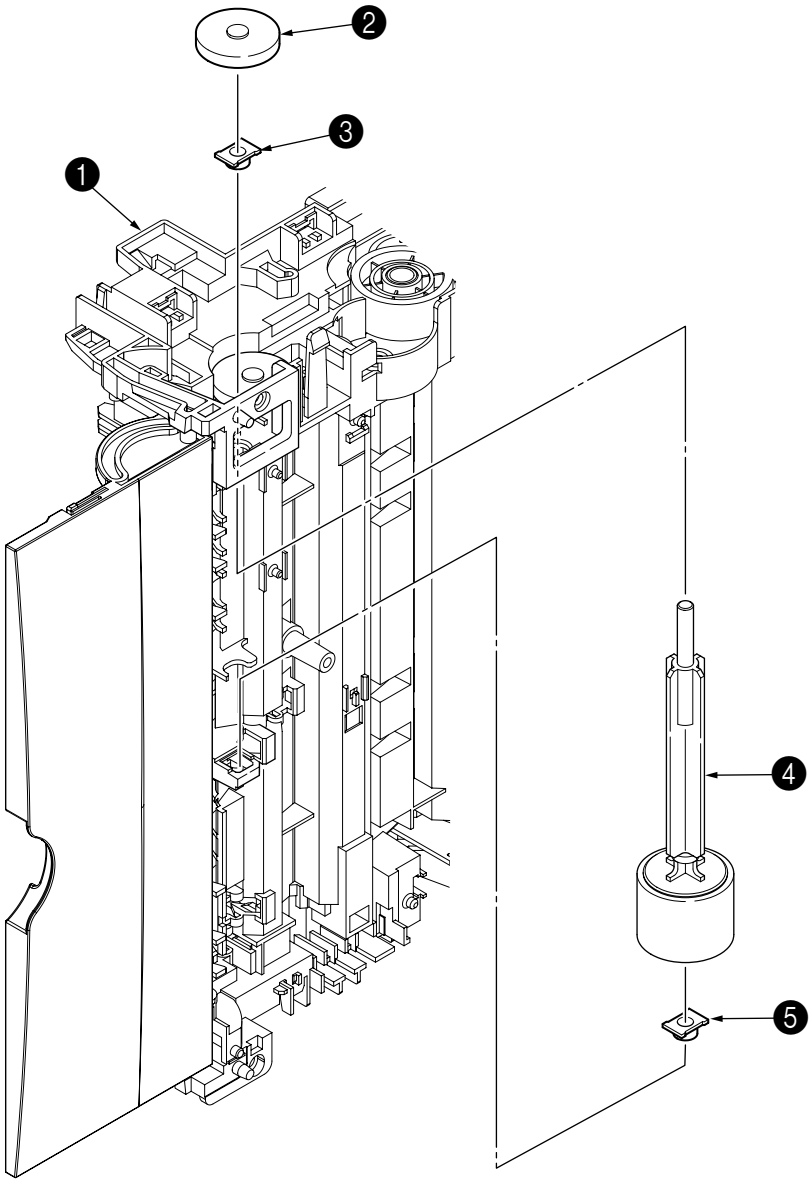
(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

(5) Remove the motor assy (see 2.3.10).

(6) With the lower base unit ❶ standing on its side, remove the one-way clutch gear ❷ and the bearing (A) ❸.

(7) Remove the hopping roller shaft assy ❹ (the bearing (B) ❺ comes off, so be careful not to lose it).



2.3.12 Stacker Cover Assy

(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

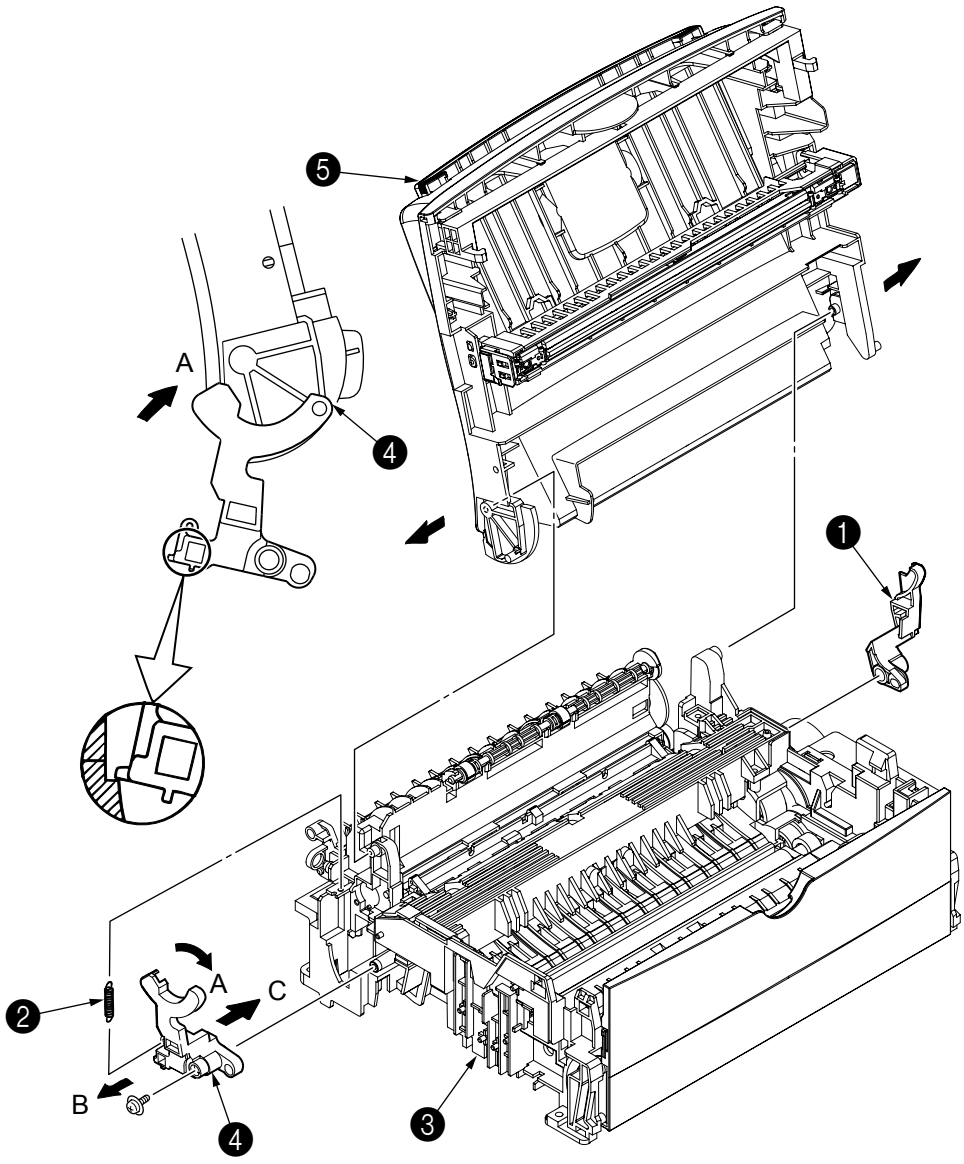
(4) Remove the motor assy (see 2.3.10).

(5) Remove the reset lever R ❶.

(6) Remove one screw, detach the reset spring ❷ from the lower base unit ❸, turn the reset lever L ❹ in the direction of arrow A until it stops, and remove it in the direction of arrow B.

(7) Unlock two latches of the lower base unit ❸, then remove the stacker cover assy ❺.

Note : When reinstalling the reset lever L ❹, fit it onto the guide of the lower base unit ❸, turn it in the direction of arrow C while pressing down the shaft of back up roller, and engage the reset lever L ❹.



2.3.13 Registration Roller

(1) Remove the upper cover (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

(5) Remove the motor assy (see 2.3.10).

(6) Unlock the latch at the left side of the paper guide (R) ❶ and remove the paper guide (R) ❶.

(7) With the lower base unit standing on its side, remove the one-way clutch gear ❷ and the bearing ❸.

(8) Remove the Registration Gear by unloking the latch of the Gear ❹.

(9) Remove the Registration Bearing L ❺.

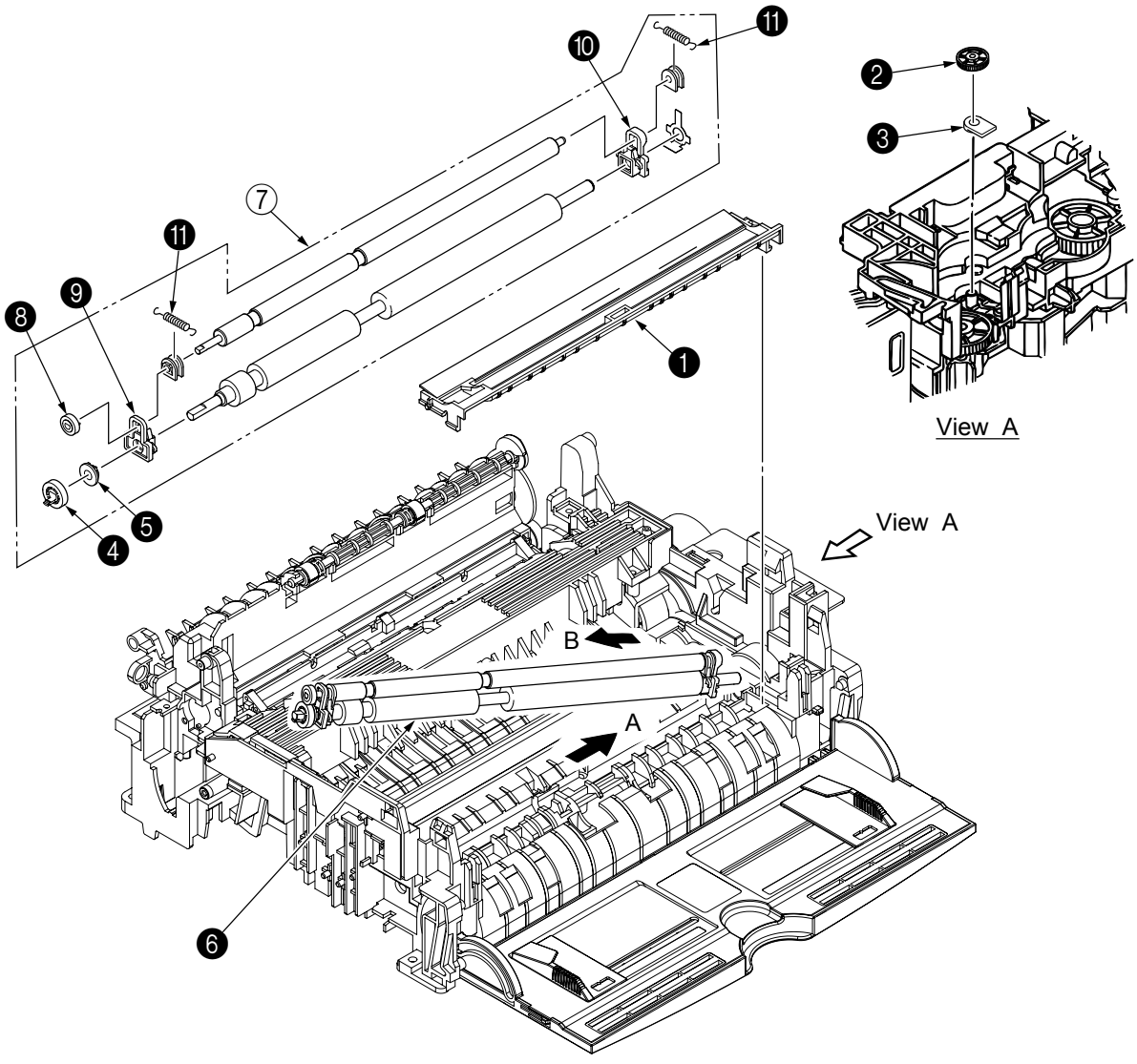
(10) Press the registration roller ❻ in the direction of arrow A and lift up the left side of it, then remove the registration roller Assy ⑦.

(11) Pull out the registration roller Assy ⑦ in the direction of arrow B.

(12) Remove the pressure roller Assy gear ❽ by unloking the latch of the gear ❽.

(13) Remove the bearing-Registration L ❾ and bearing Registration R ❿.

(14) Remove the Spring ⓫ from the bearing ❾, ❿.



2.3.14 Roller Transfer Assy

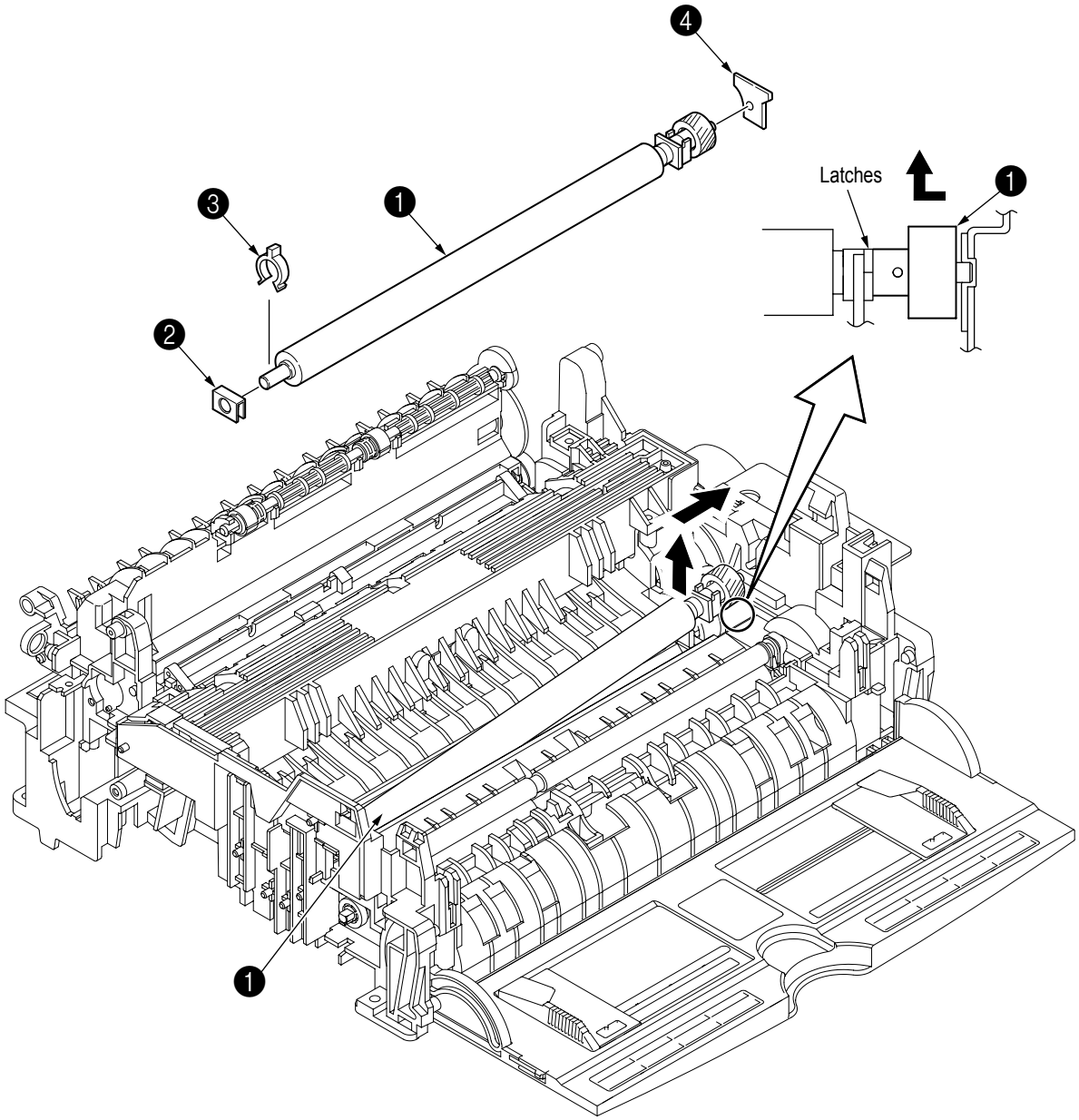
(1) With the power switch turned off, unplug the AC cord from the outlet.

(2) Open the stacker cover.

(3) Remove the spacer ❶.

(4) Release the roller transfer assy ❷ by unlocking two latches of the bearing TR (never apply excessive force when unlocking the latch) and slide the roller transfer assy left to remove the gear from the bracket.

(5) Lift the right side of the roller transfer assy ❷, and shift it to the right side, then pull it out from the main unit (at this time, the bearings ❸ of the left side and holder-TR ❹ of the right side of the roller transfer assy ❷ will also come off).



2.3.15 Fusing Unit

(1) Remove the upper cover (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

(5) Remove the stacker cover assy (see 2.3.12).

(6) Remove the connecting cable ① of the heater and connecting cable ② of the thermistor from the hooks of the lower base.

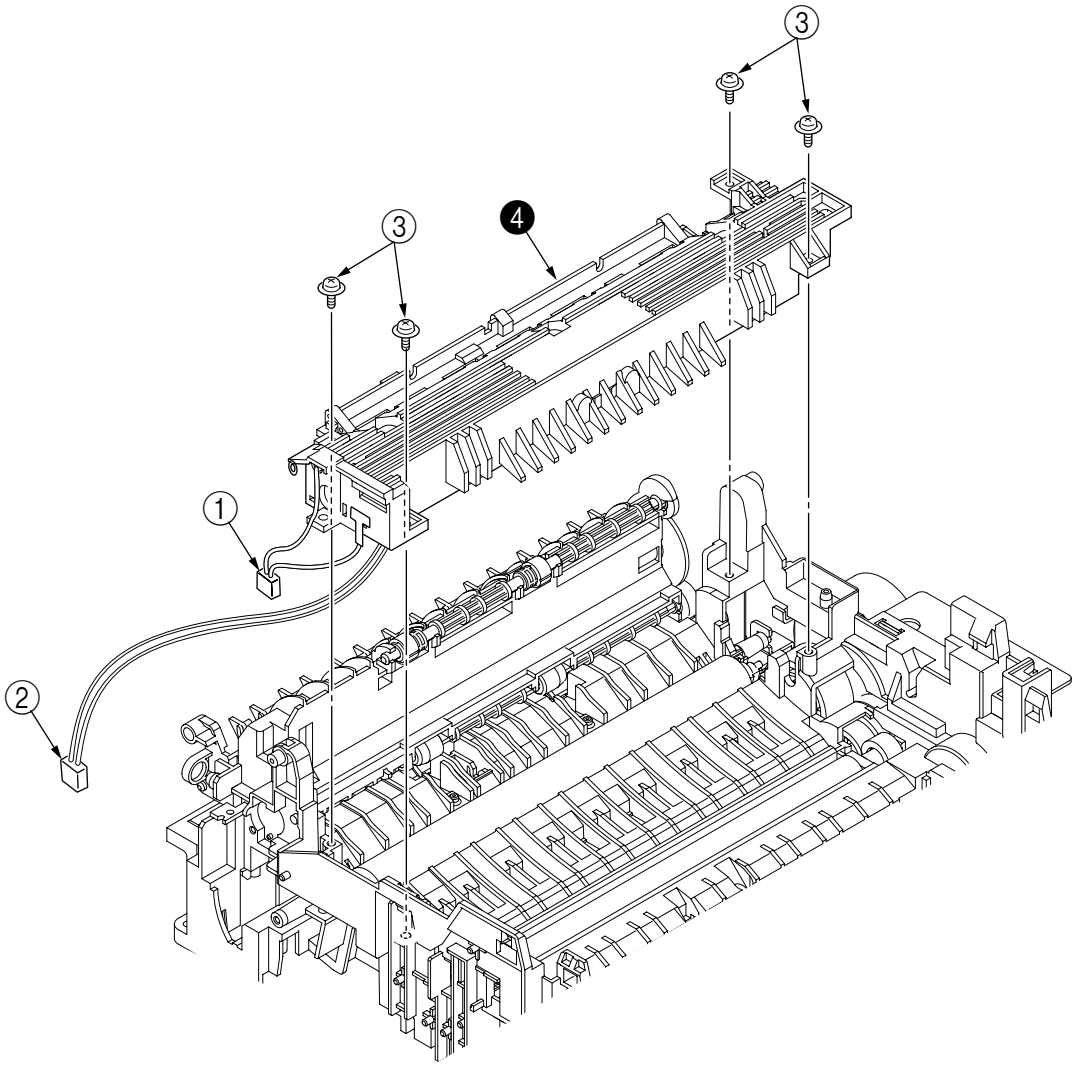
(7) Remove four screws ③, lift and remove the fusing unit ❹.

Caution: Fusing unit may be hot. Use care when handling.

Notes : 1. When reinstalling or removing the fusing unit, tighten or loosen the screws while holding the fusing unit assy ❹ down with your hand (it is being pushed up by back up roller).

2. When reinstalling the screws ③, be sure to direct the screws into preexisting thread and avoid damaging the threads.

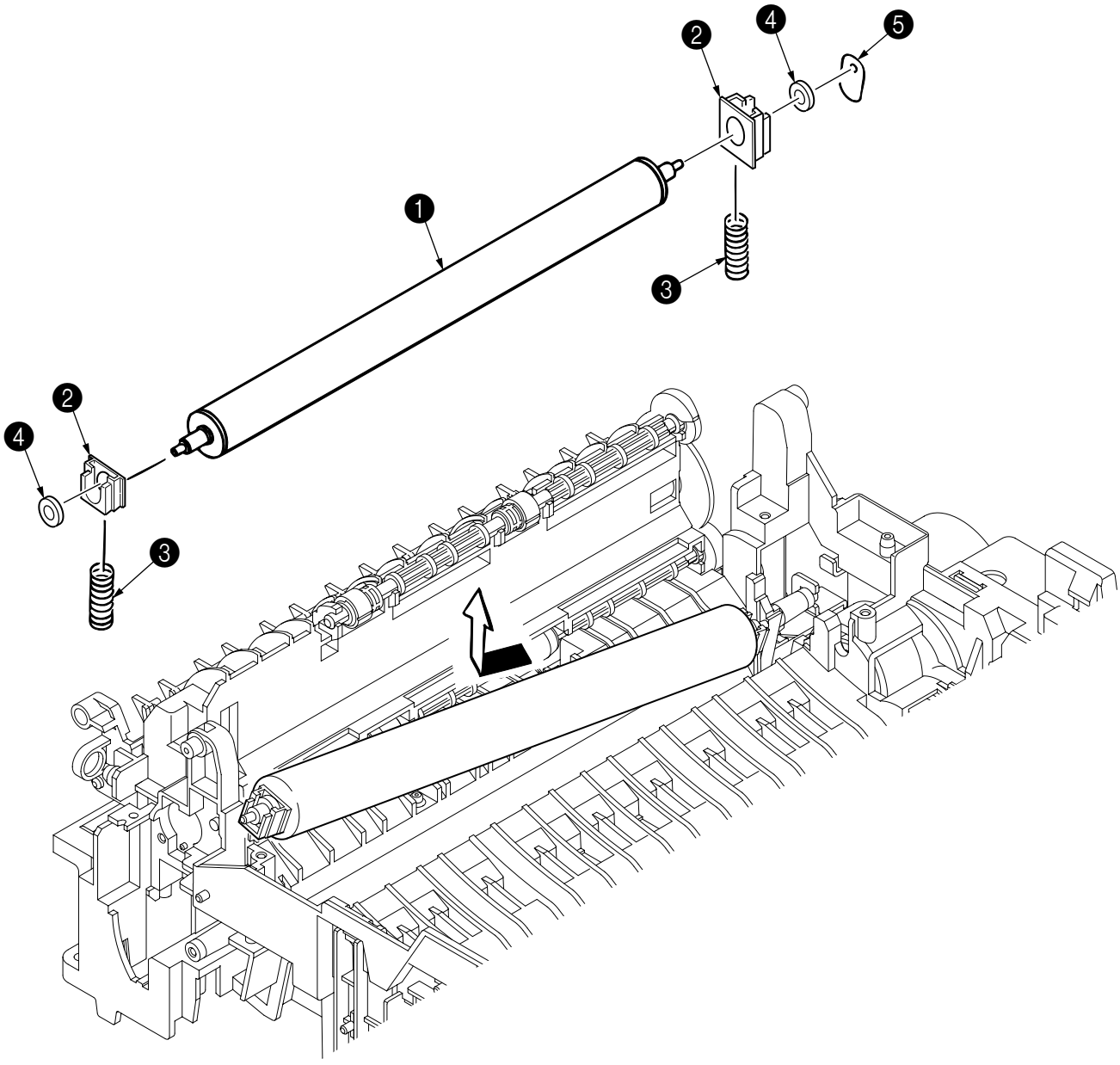
3. Do not apply excessive torque when tightening the screws ③.



2.3.16 Back-up Roller

(1) Remove the fusing unit assy (see 2.3.15).

(2) Lift the left side of the back-up roller ❶, and pull it out to the left side (at this time, two bearing Holders (back-up) ❷ and the bias springs (back-up) ❸and the two ball-bearings ❹, washer C ❺ will also come off).



2.3.17 Sensor Plate (Inlet)

(1) Remove the upper cover (see 2.3.1).

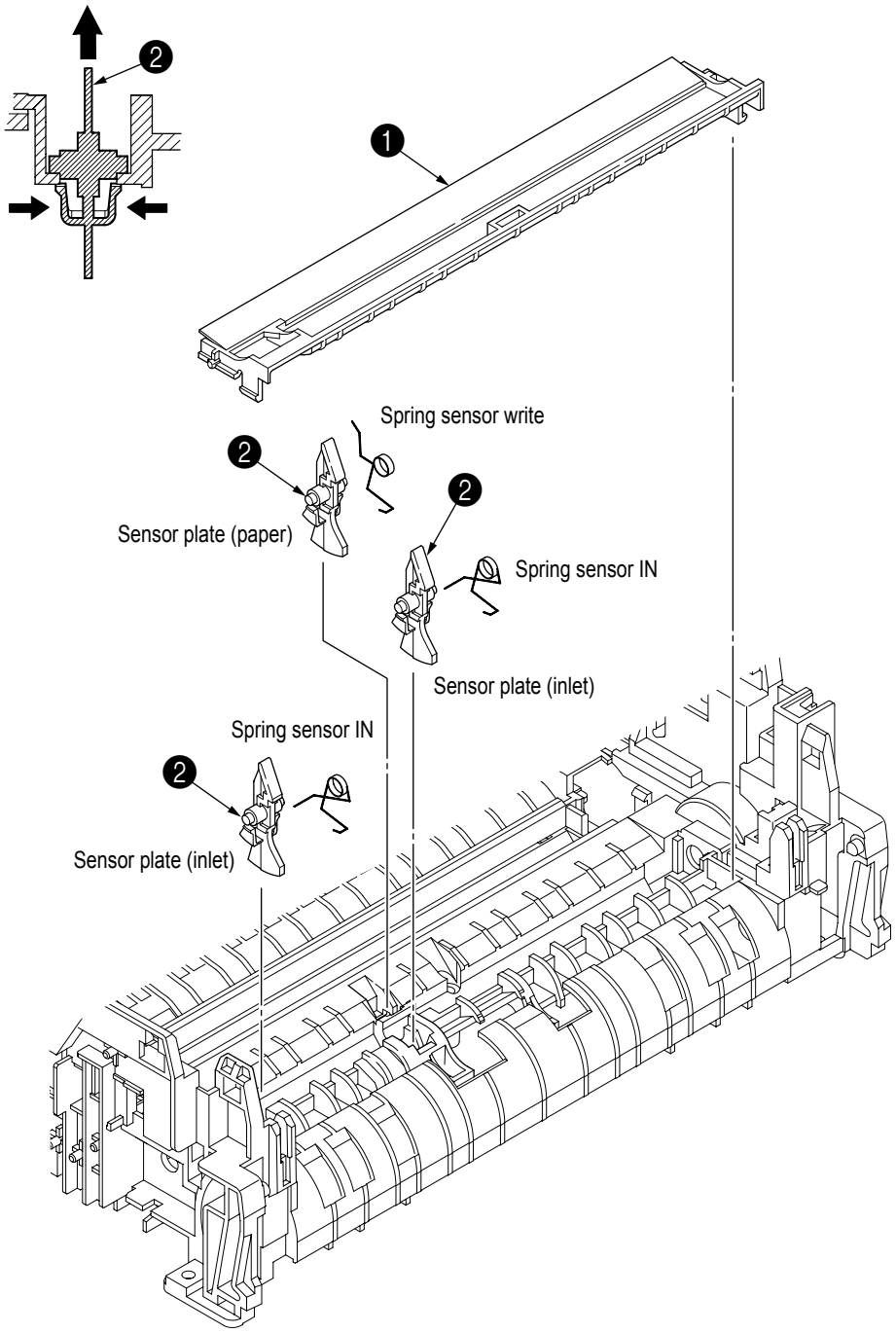
(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

(5) Unlock the latch at the left side of the paper guide (R) ❶ and remove the paper guide (R) ❶.

(6) Press the clamps of three sensor plates (inlet and paper) ❷, and remove them by pressing them upward from the bottom. When removing the sensor plates, take care not to lose the springs.



2.3.18 Sensor Plate (Outlet), Sensor Wire Assy

(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the eject roller assy (see 2.3.9).

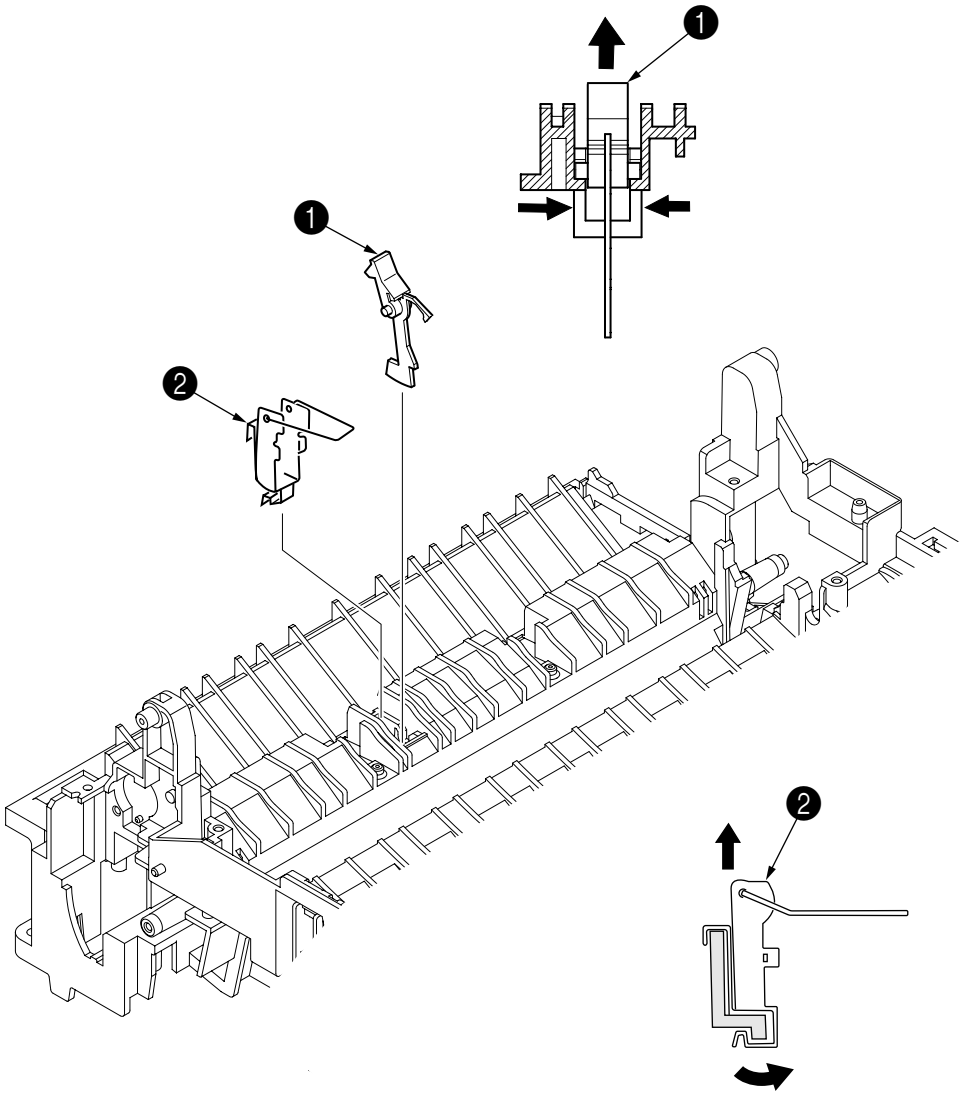
(4) Remove the face up stacker assy (see 2.3.8).

(5) Remove the lower base unit (see 2.3.4).

(6) Remove the fusing unit assy (see 2.3.15).

(7) Press the clamps of the sensor plate (outlet) ❶, and remove the sensor plate by pushing it up.

(8) Turn the clamps of the sensor wire assy ❷ remove the sensor wire assy from the lower base unit.

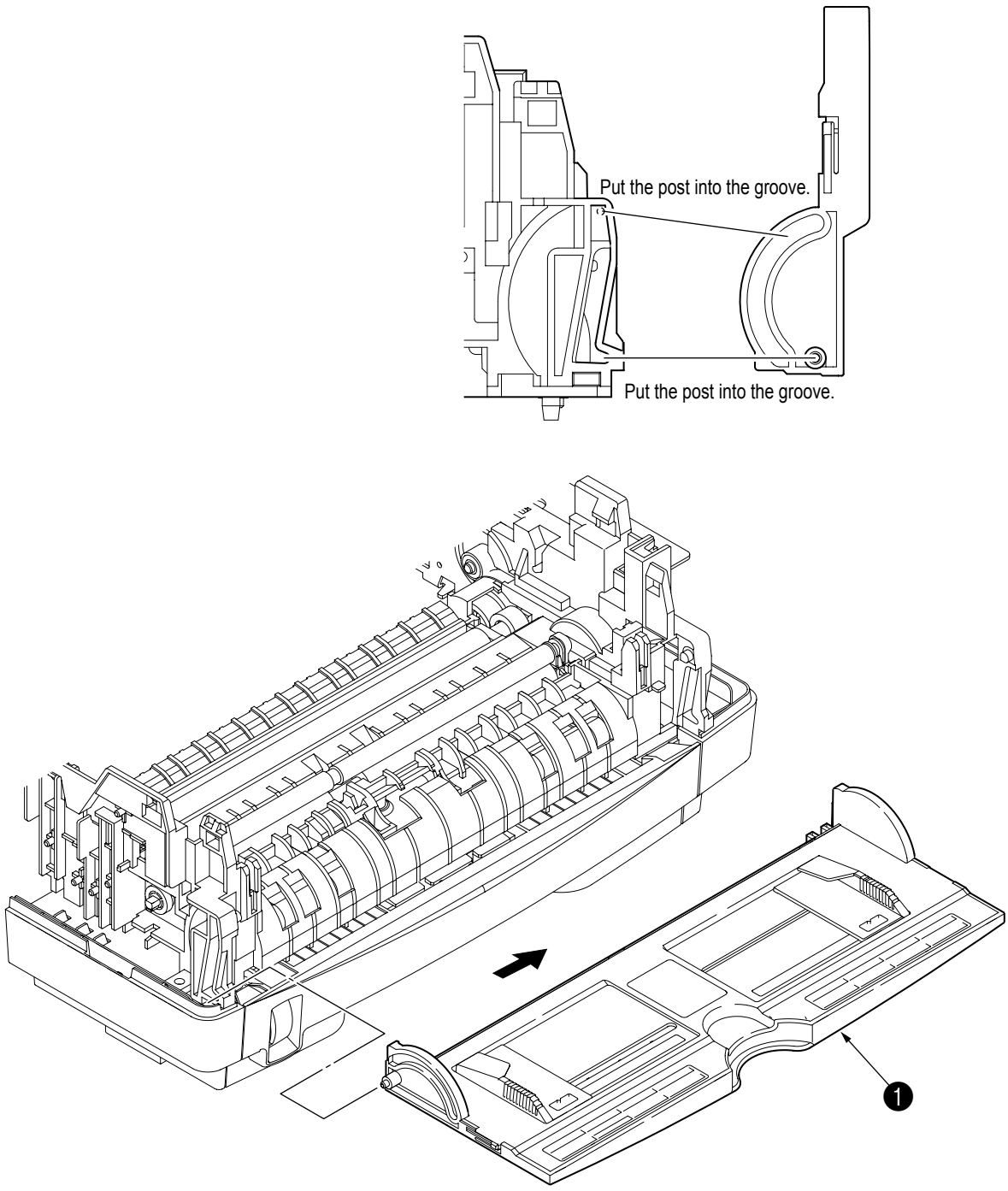


2.3.19 Manual Feed Guide Assy

(1) Remove the upper cover assy (see 2.3.1).

(2) Open the manual feed guide assy ❶, and release the engagement on both sides with the main unit by carefully bending the manual feed guide assy ❶.

Note : When remounting, verify the proper the engagements as shown in the diagram.



2.3.20 Sensor Plate (Paper Supply)

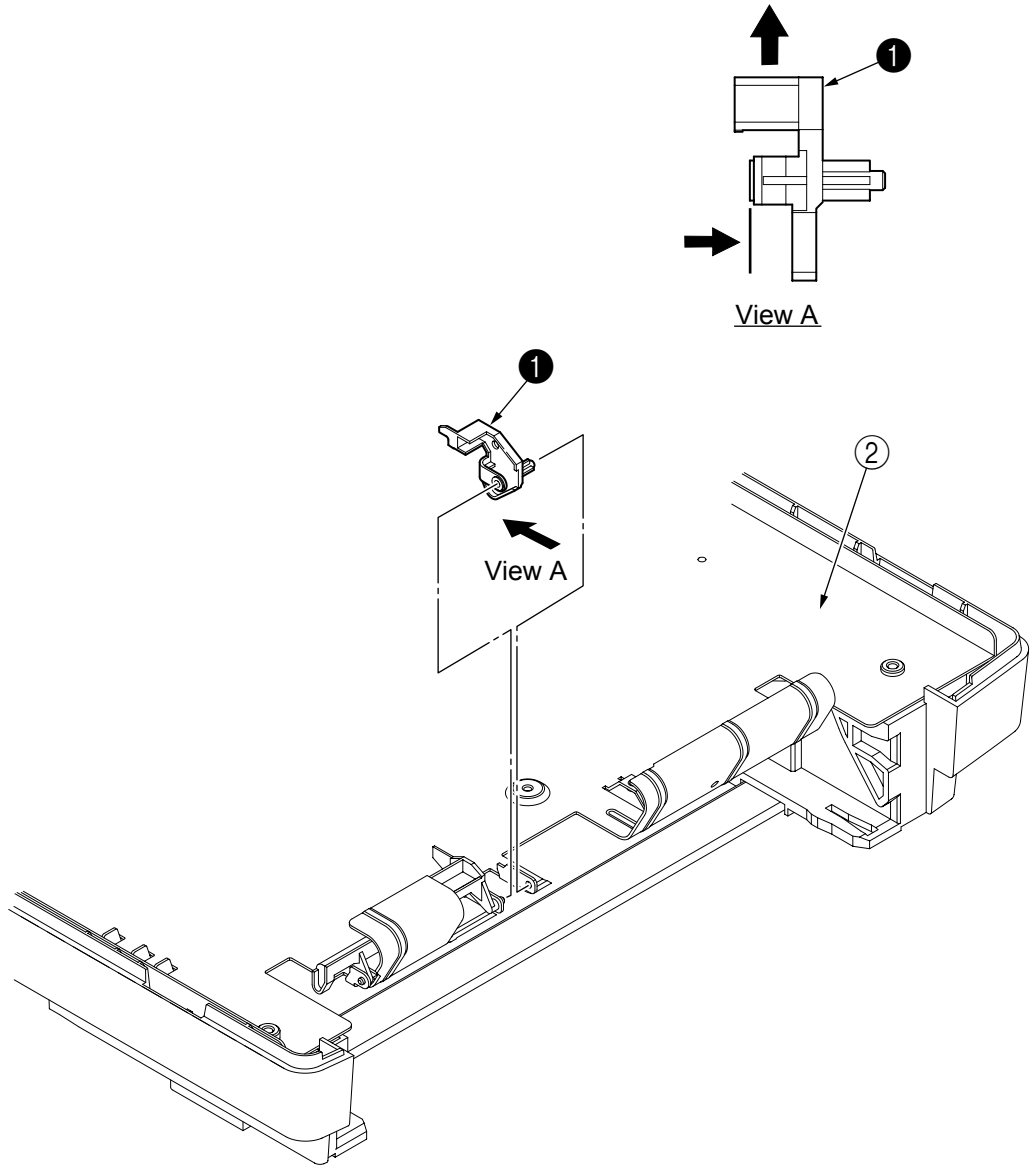
(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

(5) Press the clamps of the sensor plate (paper supply) ❶ to unlock the latch, and remove it from the base plate ②.



2.3.21 GRV-2 PCB

(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the operator panel assy (see 2.3.3).

(3) Remove the face up stacker assy (see 2.3.8).

(4) Remove the lower base unit (see 2.3.4).

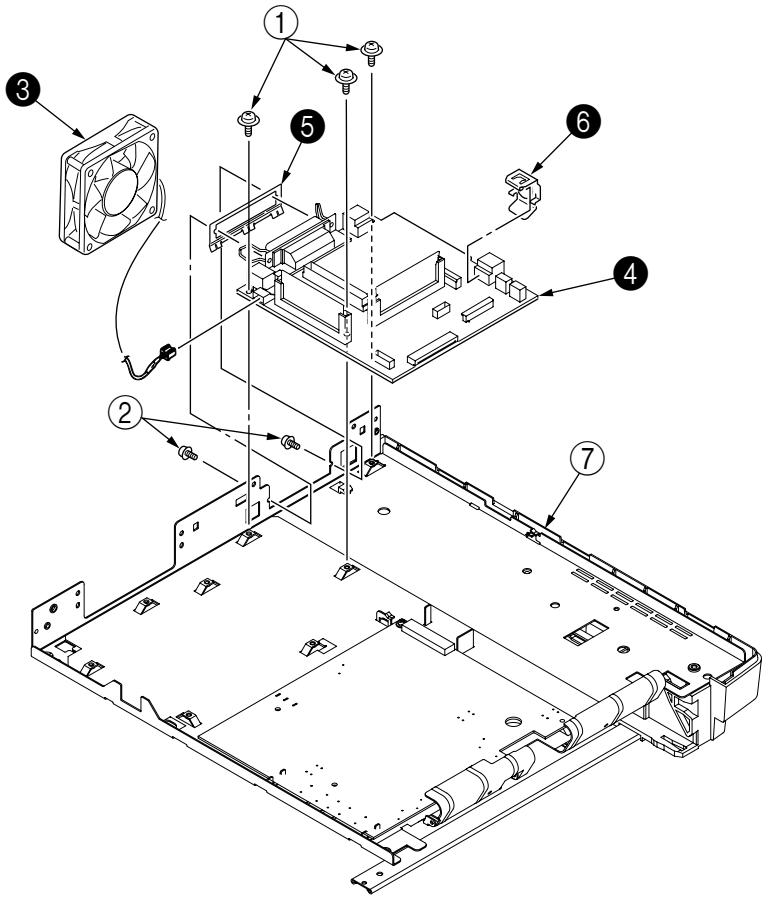
(5) Remove three screws ① and two screws ②.

(6) Remove the connector FAN, and disconnect the fan motor ❸.

(7) Remove the three connectors PW_1, PW_2 and HVIF.

(8) Remove the GRV-2 PCB ❹ and plate earth A ❺ and plate earth (Env) ❻ .

Note : When reinstalling the GRV-2 PCB ❹ onto the base plate ⑦, insert the edge of the GRV-2 PCB ❹ in two slots of the base plate ⑦.



2.3.22 Power Supply Board and High Voltage/Sensor Board

(1) Remove the upper cover assy (see 2.3.1).

(2) Remove the lower base unit (see 2.3.4).

(3) Remove two screws ① and the guide plate ②.

(4) Remove the AC inlet ③ from the guide plate ②.

(5) Remove the screw ④ and remove the grounding (earth) wire ⑤.

(6) Remove the connectors CN2 from power supply board ❻ and CN1 from high voltage/sensor board ❿.

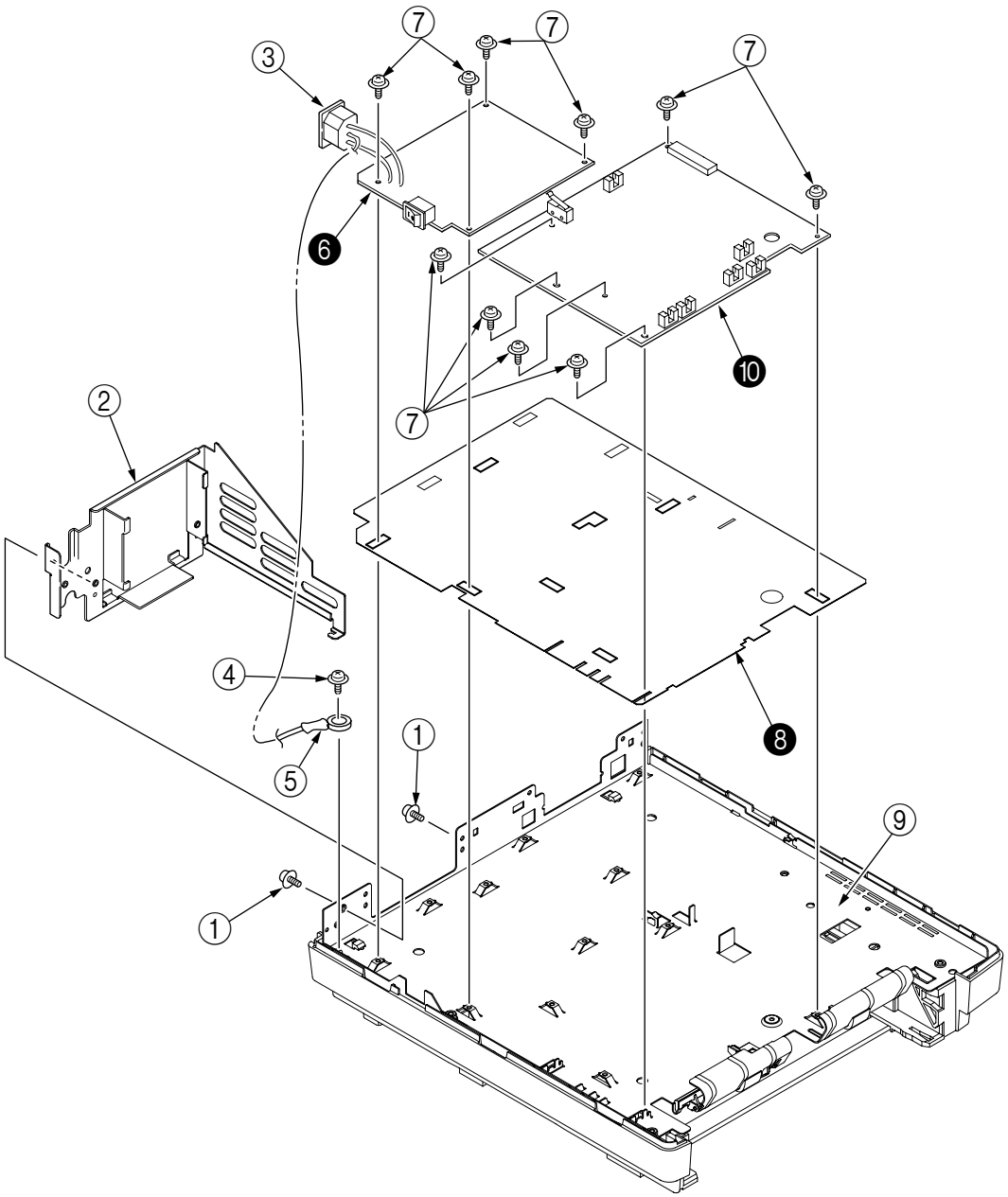
(7) Remove ten screws ⑦, and remove the power supply board ❻ and high voltage/sensor board ❿.

(8) Remove the Insulation plate ❽ from the base plate ⑨.

Notes : ***1.*** Be careful about the sensor (paper supply) when reinstalling the lower base.

2. Make sure that no excessive force is applied to the power supply switch.

3. When installing the power supply board onto the base plate, be careful not to bend the base plate (it is desirable to place a block underneath it to prevent bending).



2.3.23 Cassette Guide L Assy

(1) Remove the paper cassette.

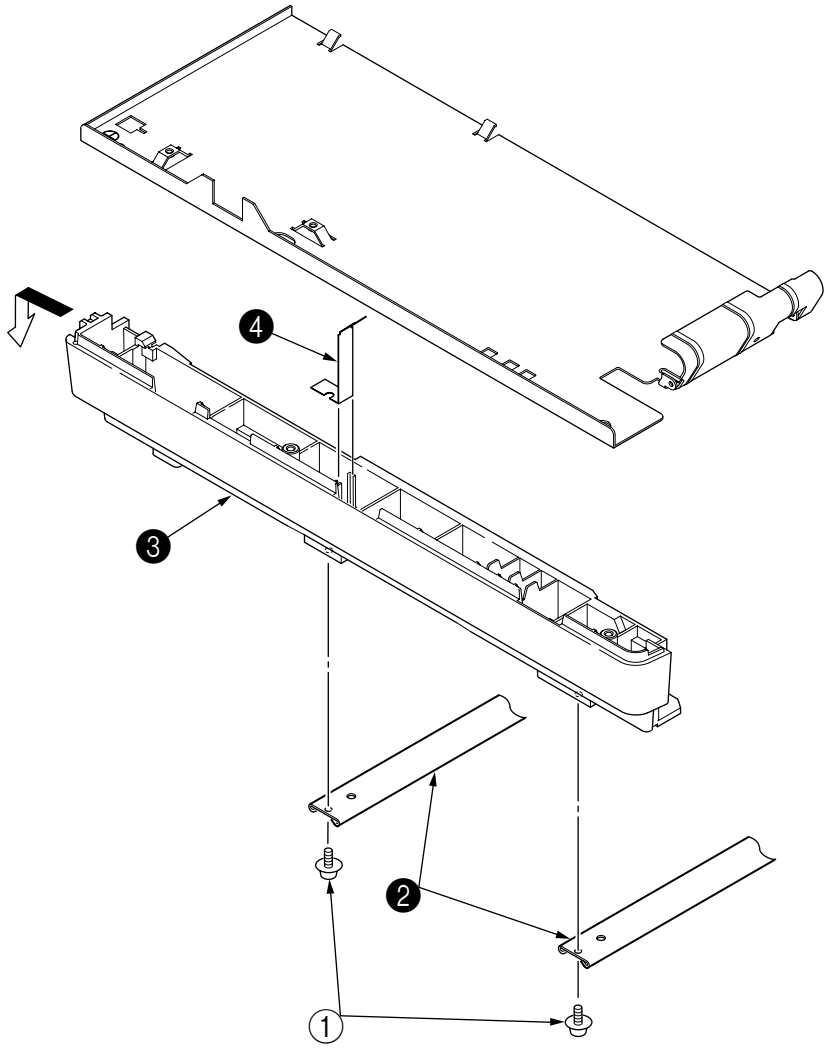
(2) Remove the upper cover assy (see 2.3.1).

(3) Remove the lower base unit (see 2.3.4).

(4) Remove two screws ①, and remove the beam plates ❷.

(5) Remove the cassette guide L Assy ❸ by shifting it in the direction of the arrow as shown below.

(6) Remove the earth plate ❹.



2.3.24 Cassette Guide R Assy

(1) Remove the paper cassette.

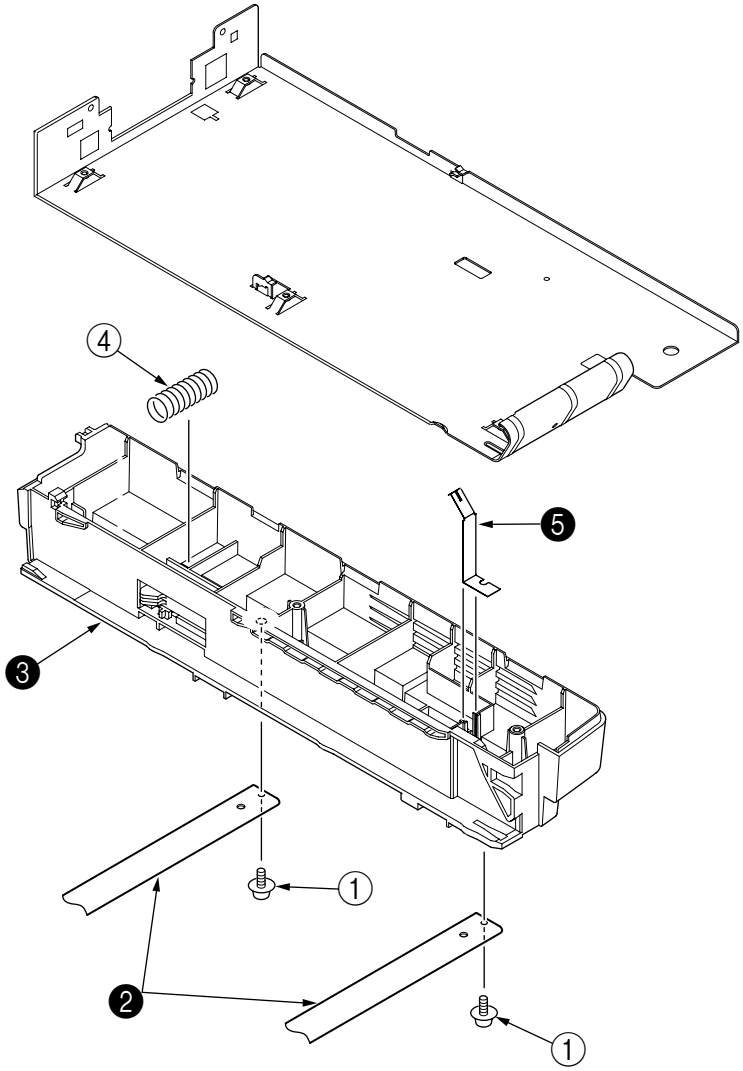
(2) Remove the upper cover assy (see 2.3.1).

(3) Remove the lower base unit (see 2.3.4).

(4) Remove two screws ①, and remove the beam plates ❷.

(5) Remove the cassette guide R Assy ❸ by shifting it in the direction of arrow.

(6) Remove the earth plate ④ and the cassette lock spring ❺.



3. ADJUSTMENT

This chapter provides explanations concerning the adjustment necessary when replacing a part. The adjustment is made by changing the parameter value set in EEPROM on the main control board. The parameter can be set by the key operation from the operator panel. This printer has three kinds of maintenance modes, and it is necessary to select one of the modes when replacing any parts.

3.1 Maintenance Modes and Functions

3.1.1 User Maintenance Mode (Administrator Menu)

In order to enter Admin MENU, turn the printer on while holding down the ITEM+/ITEM- switch.

Function

There are seventeen functions as follows:

Category	Item	Value	Functions
OP MENU	ALL	ENABLE DISABLE	Sets All Category Enable/Disable of User Menu. Set to Disable, User Menu is not shown. Subsequent Items are not displayed if the Categories are disabled. Panel Lock is available when this MENU is set to DISABLE.
	INFO.	ENABLE DISABLE	Sets Category INFORMATION MENU Enable/Disable. Set to Disable, Category INFORMATION MENU of User Menu is not displayed.
	PRINT	ENABLE DISABLE	Sets Category PRINT MENU Enable/Disable. Sets to Disable, Category PRINT MENU of User Menu is not displayed.
	MEDIA	ENABLE DISABLE	Sets Category MEDIA MENU Enable/Disable. Sets to Disable, Category MEDIA MENU of User Menu is not displayed.
	SYS CONF	ENABLE DISABLE	Sets Category SYSTEM CONFIG MENU Enable/Disable. Set to Disable, Category SYSTEM CONFIG MENU of User Menu is not displayed.
	PCL MENU	ENABLE DISABLE	Sets Category PCL EMULATION MENU Enable/Disable. Set to Disable, PCL EMULATION MENU of User Menu is not displayed.
	PPR MENU	ENABLE DISABLE	Sets Category PPR EMULATION MENU Enable/Disable. Set to Disable, PPR EMULATION MENU of User Menu is not displayed.
	FX MENU	ENABLE DISABLE	Sets Category FX EMULATION MENU Enable/Disable. Set to Disable, FX EMULATION MENU of User Menu is not displayed.
	ESC/P	ENABLE DISABLE	Sets Category ESC/P EMULATION MENU Enable/Disable. Set to Disable, ESC/P EMULATION MENU of User Menu is not displayed. (Displayed only for Domestic market)
	PARALLEL	ENABLE DISABLE	Sets Category PARALLEL MENU Enable/Disable. Set to Disable, Category PARALLEL MENU of User Menu is not displayed.
	RS232C	ENABLE DISABLE	Sets Category RS232C MENU Enable/Disable. Set to Disable, Category RS232C MENU of User Menu is not displayed. Displayed only if RS232C is intalled.
	USB	ENABLE DISABLE	Sets Category USB MENU Enable/Disable. Set to Disable, Category USB MENU of User Menu is not displayed.
	NETWORK	ENABLE DISABLE	Sets Category NETWORK MENU Enable/Disable. Set to Disable, Category NETWORK MENU of User Menu is not displayed. Displayed only if a NIC is installed.

Category	Item	Value	Functions
OP MENU	MEMORY	ENABLE DISABLE	Sets Category MEMORY MENU Enable/Disable. Set to Disable, Category MEMORY MENU of User Menu is not displayed.
	ADJUST	ENABLE DISABLE	Sets Category SYSTEM ADJUST MENU Enable/Disable. Set to Disable, Category SYSTEM ADJUST MENU of User Menu is not displayed.
	MAINTE	ENABLE DISABLE	Sets Category MAINTENANCE MENU Enable/Disable. Set to Disable, Category MAINTENANCE MENU of User Menu is not displayed.
	USAGE	ENABLE DISABLE	Sets Category USAGE MENU Enable/Disable. Set to Disable, Category USAGE MENU of User Menu is not displayed.

Detailed descriptions of these functions are provided in Appendix E, **DIAGNOSTICS TEST.**

3.1.2 System Maintenance Mode (System Maintenance Menu)

Note: This mode is used only by maintenance personnel and it should not be released to the end-users.

The printer enters System Maintenance Menu when the power supply switch is turned ON while the Menu/Item+/Value-/Cancel switches are held down.

Function

There are functions as follows:

Category	Item	Value	Functions
OKIUSER	OKIUSER	ODA OEL APS JP1 JPOEM1 JPOEM2 OEMA OEML	Sets brands; JPOEM1:Japanese OEM(1) JPOEM2:Japanese OEM(2) OEMA:Overseas OEM for A4 default OEML:Overseas OEM for Letter default Selecting brand will automatically prompt reboot.
MAINTE MENU	FL FOR-MAT	EXECUTE	Initializes Flash ROM forcedly. Every Flash ROM installed is subject to initialization.
	EEPROM	RESET	Initializes EEPROM. Special items, such as MAC Address, are not initialized.
CONFIG MENU	CODESET	TYPE1 TYPE2	Sets Russian/Greek and view/not view. TYPE1: Not view Russian/Greek. TYPE2: View Russian/Greek. Use a panel that supports Russian/Greek to view Russian/Greek.
ENG STAT	ENG STAT	PRINT	Selecting by the Select switch, then pressing the On-line switch will prompt initialization and printing Engine information.
PAGE PRT	PAGE PRT	ENABLE DISABLE	Sets printing or not printing the total page count in PRINT MENU MAP.

Category	Item	Value	Functions
EMULATE	PCL	ENABLE DISABLE	Changes the default PDL for each brand. PDLs that are disabled in this menu will not be displayed at EMULATE of User Menu or OP MENU of Admin Menu. (No specific to PCL XL is provided; thus, when DISABLE is set, there is not visual change.) When print data in the PDL language set to DISABLE is received, the printer will desplay INVALID DATA and discard received data. PS3 EMU will be displayed only when PSE is installed. For PN272/83, PCL cannot be set to DISABLE. (ENABLE must be set to make it always usable. Even if set to DISABLE, received data will be processed.)
	IBM PPR	ENABLE DISABLE	
	EPSONFX	ENABLE DISABLE	
	PS3 EMU	ENABLE DISABLE	
	ESC/P	ENABLE DISABLE	
	PCL XL	ENABLE DISABLE	
LOOPTEST	RS232C	EXECUTE	Displayed only if an RS232C is installed. Loop Test runs Serial I/F function test without connecting the host PC. The printer alone sends/receives “00”FFH” data. Loop Test requires attachment of a Loop connector (pin2: TD and pin3: RD are shorted) prior to execution. A Loop count is displayed real-time on LCD, and if an error occurs, an error message will be displayed. This mode can be ended only by turning the power off. Following this operation, the power is shut down; thus, the printer cannot go back in Operation Mode or other Maintenance Mode.
COMT PRT	CONT PRT	EXECUTE	PRINTING Rolling ASCII Continuous Print Continuously prints Rolling ASCII patterns for various types continuos testing on the maker side. (Noise test, engine test). This mode can be ended by pressing the “ONLINE” SW.Following this operation, the power turns off, thus, the printer cannot return to either operation mode or any of other maintenance modes.
DOTSHIFT	TRAY1	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from Tray 1. This area will not be initialized by the EEPROM reset operation.
	TRAY2	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from Tray 2. This item is displayed even when Tray 2 is not set. This area will not be initialized by the EEPROM reset operation. (At first, it is initialized by default.)
	MPF	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from MPF. This item is displayed even when MPF is not set. This area will not be initialized by the EEPROM reset operation. (At first, it is initialized by default.)
	MANUAL	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from the manual slot. This area will not be initialized by the EEPROM reset operation. (At first, it is initialized by default.)
NETWORK			Details depend on NETWORK.
ENG DIAG			Enters Engine Maintenance Menu.

Detailed descriptions of these functions are provided in Appendix E, **DIAGNOSTICS TEST**.

3.1.3 EEPROM Initial Setting Range for Events

As for initialization of EEPROM, ranges differ the whole phenomenon.
"O" is initialized. "–" is not initialized.

Table 3-1 The Initial-Setting domain of EEPROM

No	Events	CU EEPROM Area					PU EEPROM Area			
				Administrator Menu / System Maintenance Menu Area(*3)			Engine Maintenance Menu Area			
		Factory Default Area	User Menu Area		Brands Area	F/W Revision Area		Drum Counter	Page Counter	Toner Dot Counter
1	User Maintenance Menu EEPROM RESET Operation	–	O	–	–	–	–	–	–	–
2	F/W Revision check error at the time of a power on.	–	O	O	–	O	–	–	–	–
3	CU EEPROM area mapping Revision check error at the time of a power on.	O	O	O	–	–	–	–	–	–
4	Brands area check error at the time of a power on.(*1)	O	O	O	O	O	–	–	–	–
5	Engine Maintenance Menu ENGINE RESET Operation	–	–	–	–	–	–	O	O (*2)	O
6	PU EEPROM area mapping check error at the time of a power on.	–	–	–	–	–	O (*3)	O	O	O

(*1) The model (forcing) which operated before is for operating as another model (forcing), and a Brands check is recognized as an error and resets change of the Brands point by the PJL command, operation at the time of the power supply injection by new EEPROM, etc.

(*2) It restricts to the time when whose page counter is 500 or less sheets, and is reset by 0. (ENGINE RESET by the PJL command is not this limitation.)

(*3) Although a DOT SHIFT setting menu exists in a system maintenance menu, since setting value preservation area is arranged at PU EEPROM AREA, even when the system maintenance menu item is initialized, a DOT SHIFT setup is not initialized. On the contrary, when PU EEPROM AREA is initialized, a DOT SHIFT setup is also initialized.

3.2 Adjustment When Replacing a Part

Adjustment is necessary when replacing any of the following parts.

Part Replaced	Adjustment
Image Drum Cartridge	Reset the image drum counter (refer to User's manual).
Main Control Board	EEPROM data Upload / Download

3.2.1 Uploading/Downloading EEPROM data

When the controller printed circuit board is replaced, the contents of the old EEPROM shall be copied to the new EEPROM on the new board to preserve customer settings. For the purpose, use the Maintenance Utility.

A operation method of Maintenance Utility, please refer to Maintenance Utility Operating Specifications.

The maintenance utility is designed to be used only by field engineer and it should not be released to the end-users.

4. PERIODICAL MAINTENANCE

4.1 Periodical Replacement Parts

The parts are to be replaced periodically as specified below:

Part name	Condition for replacement	Cleaning	Remarks
• Toner cartridge 2.5K (Type 9)	About 2,500 sheets of paper have been printed.	• LED head	Consumables
• Toner cartridge 6K (Type 9)	About 6,000 sheets of paper have been printed.	• LED head	Consumables
• Image drum cartridge (Type 9)	About 25,000 sheets of paper have been printed. See 1.4. (14)		Consumables

4.2 Cleaning

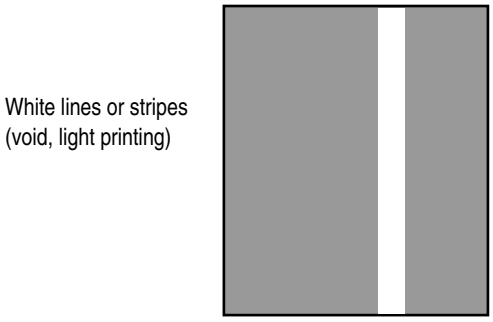
Remove any toner or dust accumulated inside the printer. Clean in and around the printer with a piece of cloth when necessary. Use the handy cleaner (service tool) to clean inside the printer.

Note: Do not touch the image drum, LED lens array, or LED head connector block.

4.2.1 Cleaning of LED Lens Array

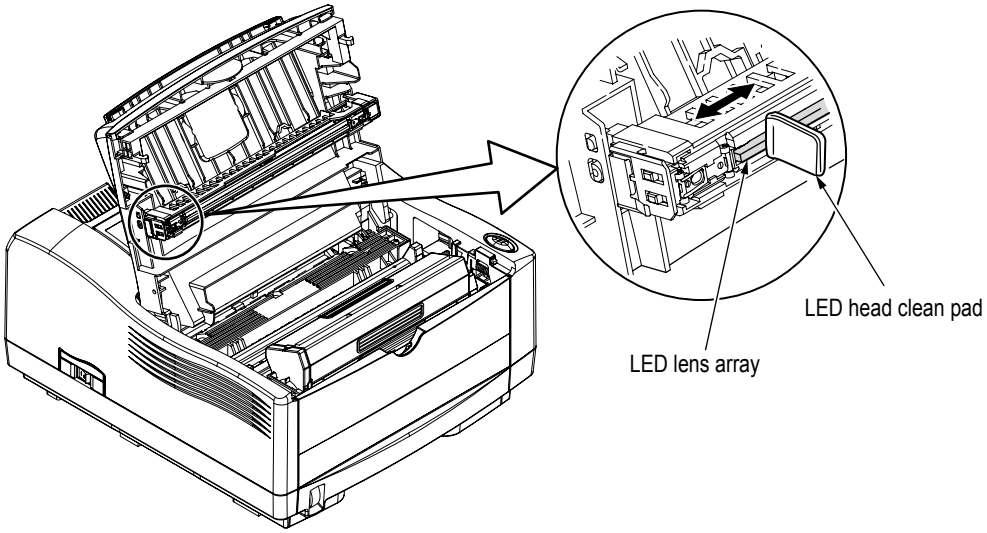
Clean the LED lens array or replace the toner cartridge when white lines or stripes (void, light printing) are generated vertically down the page, as shown below.

Note: The LED lens array must be cleaned with an LED head cleaner included in the replacement toner kit.



(1) Set the LED head cleaner to the LED lens array as shown in the figure, then slide the cleaner back and forth horizontally several times to clean the head.

Note: Gently press the LED head cleaner onto the LED lens array.



(2) Throw the cleaner pad away.

4.2.2 Cleaning Page Function

There is a charge roller cleaning function with this printer, which can be executed by the user.

(1) ① Press the MENU key several times, and the LCD displays "MAINTE MENU".
② Press the ITEM key, and the LCD displays "CLEANING PRINT".
③ Press the SELECT key. The printer enters the cleaning mode.

(2) The LCD displays "MANUAL" on the upper line, and on the lower line, "LETTER REQUEST" is displayed, scrolling one character width at a time from right to left "LETTER" on the lower line may instead be "A4" depending on the printer designation.

When the above messages appear on the LCD, the user can verify that the printer has entered the cleaning mode and that it is requesting insertion of a letter (or A4) size paper into the manual feederslot.

(3) Insert a sheet of paper into the manual feeder slot.

(4) Toner attached to the image drum is transferred onto the inserted sheet, and the sheet is ejected with the toner residues printed. While this process is going on, the LCD displays "PRINT CLEANING" message.

(5) The printer returns to "MAINTE MENU".
The LCD displays "CLEANING PRINT".

5. TROUBLESHOOTING PROCEDURES

5.1 Troubleshooting Tips

(1) Check the troubleshooting section in the Printer Handbook.

(2) Gather as much information about the situation as possible.

(3) Inspect the equipment under the conditions close to those in which the problem had occurred.

5.2 Points to Check before Correcting Image Problems

(1) Is the printer being run in proper ambient conditions?

(2) Are supplies (toner) and routine replacement part (image drum cartridge) being replaced properly?

(3) Is the printing paper normal (acceptable quality)?

(4) Is the image drum cartridge being loaded properly?

5.3 Tips for Correcting Image Problems

(1) Do not touch, or bring foreign matter into contact with the surface of the image drum.

(2) Do not expose the image drum to direct sunlight.

(3) Keep hands off the fuser unit as it heats up during operation.

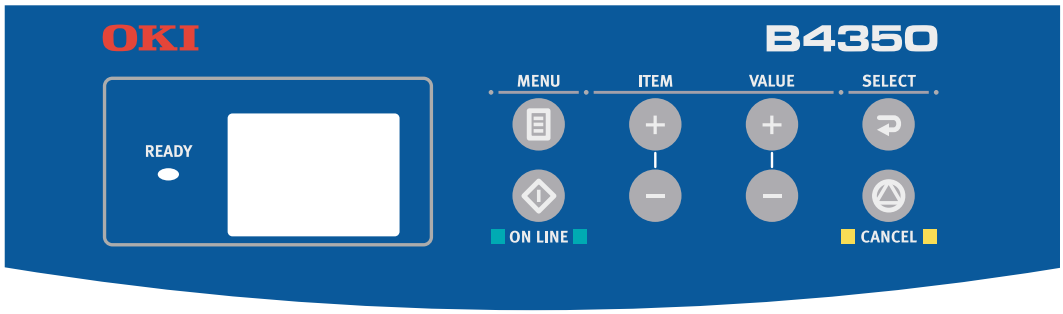
(4) Do not expose the image drum to light for longer than 5 minutes at room temperature.

5.4 Preparation for Troubleshooting

(1) Operator panel display

The failure status of the printer is displayed by the liquid crystal display (LCD) of the operator panel. Take proper corrective action as directed by messages which are being displayed on the LCD.

For ODA/OEL/AOS



Status message display

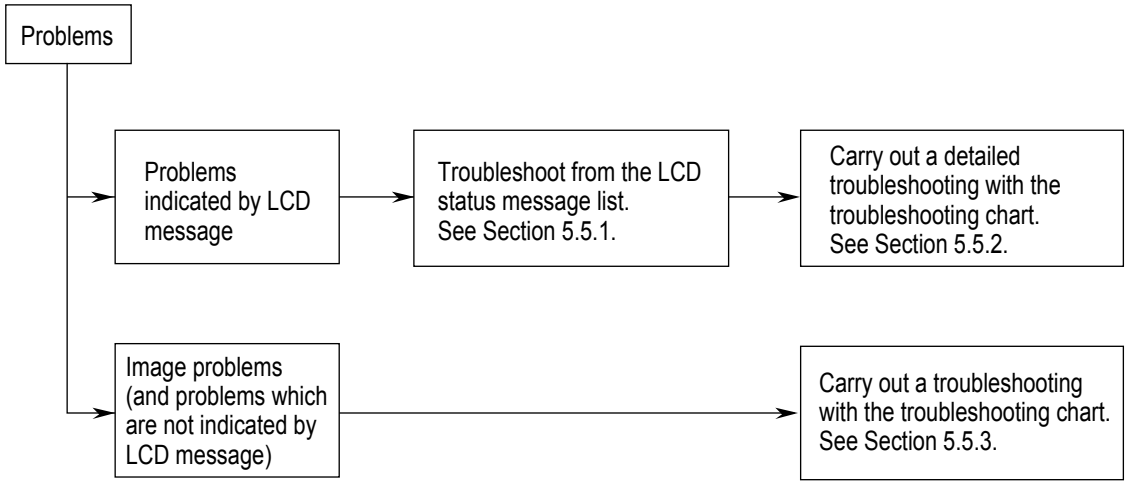
Ready LED display

: Off : Blinking

: On : Undefined

5.5 Troubleshooting Flow

Should there be a problem with the printer, carry out troubleshooting according to the following procedure flow:


Problems
Problems indicated by LCD message
Troubleshoot from the LCD status message list. See Section 5.5.1.
Carry out a detailed troubleshooting with the troubleshooting chart. See Section 5.5.2.
Image problems (and problems which are not indicated by LCD message)
Carry out a troubleshooting with the troubleshooting chart. See Section 5.5.3.

5.5.1 LCD Status Message/Problem List (ERROR CODES)

The status and problems which may be displayed by messages on the LCD are listed in Table 5-1.

The following are the meaning of the symbols in the LCD display.

“TRAY2” is indicated only when the second tray is set, and “MPF” is displayed only when the multipurpose feeder is set.

xxxx: Emulation (AUTO, PCL, PSE, PPR, FX)
tttt: Trays (TRAY1, TRAY2, MPF, MANUAL)
mmmm: Paper Size (LETTER, A4 SIZE, ..., B5 SIZE, A6 SIZE)
pppp: Media type (Plain, Transparency, ...)
cccc: COVER (UPPER, TRAY2)

The following are indicated in the contents section of the displayed table.

(Job Account-related): Displayed only when the Job Account function is valid.
(PSE-related): Displayed only when PSE is set.
(PSE stands for Postscript3 Emulation. Only when PSE is set.)
(TRAY2-related): Displayed only when TRAY2 is set.
(RS232C-related): Displayed only when an RS232C card is set.
(NIC items): Displayed only when an NIC card is set.

Table 5-1 (1/5)

Status level	LCD	LED	Descroption
Normal	ON-LINE xxxx	Light	Shows on-line status.
Normal	OFF-LINE xxxx	No Light	Shows off-line status.
Normal	FILE ACCESS	Varies	Accessing to an accounting file. (Job Account-related)
Normal	ARRIVE xxxx	Varies	Data receiving, process not started yet. Displayed mainly during PJL process without text print data or during job spooling.
Normal	ACTIVE xxxx	Blink	Data receiving output processing
Normal	DATA xxxx	Varies	Un-printed data remains in Buffer. Waiting for data to follow.
Normal	PRINTING	Varies	Printer is printing.
Normal	□ □kkk/lll	Varies	Printing a copy. kkk indicates the number of sheet being printed. lll indicates the total number of sheets that have been printed. The display for normal printing is applied when the number of copies is one sheet. This item is displayed combined with a different message in the first line.
Normal	FLUSHING	Blink	Job cancellation has been instructed. Data is being ignored till the end of the job.
Normal	FLUSHING (JAM)	Blink	Indicates a status of discarding data until the end of a job after a job is cancelled when a jam is generated upon turning jam recovery OFF. MSG blinks only on the top LCD line.
Normal	FLUSHING (DENIED)	Blink	Cancelled as permission for printing has not been received. (Job Account-related) 1. MSG blinks only on the top LCD line when a job is received from a user who has not received permission for printing.
Warning	FLUSHING (LOG)	Blink	Indicates that a job has been cancelled as the area storing logs inside the printer has been drained and furthermore, a “cancel job” instruction appears when logs are full. (Job Account-related) MSG blinks only on the top LCD line.
Normal	□ WARM UP	Varies	Indicates that the printer is now warming up. This item is displayed combined with a different message in the first line.
Normal	□ PWR SAVE	Varies	A printer is in power save mode. Displayed combined with other messages in the first line.
Warning	□ TONERLOW	Varies or Blink	Toner amount is low. Displayed combined with other messages in the first line. Normal operation is possible. Not displayed, when a drum counter is in 200 or less state or a "CHG DRUM" state. • In the case of “LOW TNR” of a menu is "STOP", TONER LOW is usually detected from a state, LED is blinked, and it once becomes OFF-LINE. It will be in an ON-LINE state by cover opening and closing under push ON-LINE SW. If blink will be in an ON-LINE state, it will usually return to a state.

Table 5-1 (2/5)

Status level	LCD	LED	Descroption
Warn-ing	□ TONEREMP	Varies	Toner near empty. (This state occurs after printing 100 sheets from TONERLOW.) Displayed combined with other messages in the first line. Not displayed when “CHG DRUM” for drum life is displayed, however. Possible to cancel print job or continue normal operation.
Warn-ing	□ TONERSNS	Varies	Something is wrong with the toner sensor. Displayed combined with other messages in the first line when the engine is set to Shipping mode. Normal operation is possible. Error, explained later, is displayed when the engine is set to Factory mode.(ERR 163)
Warn-ing	□ CHG DRUM	Varies	Drum cartridge life (Warning). Displayed combined with other messages of the first line. TONER EMP ERROR status code is set to 10969 in the state of warning which has restored temporarily CHG DRUM ERROR (40996) when the drum life has occurred at the same time by cover open/close presses "ON-LINE" switch. A status code is set to 10060 in the state of CHG DRUM inde-pendent warning.
Normal	PRINT DEMO	Varies or Blink	Demo page printing.
Normal	PRINT FONTS	Varies or Blink	Fonts sample printing.
Normal	PRINT MENU MAP	Varies or Blink	Menu map printing.
Normal	PRINT FILELIST	Varies or Blink	File list printing.
Normal	PRINT CLEANING	Varies or Blink	Cleaning page printing.
Warn-ing	INVALID DATA	Varies	Received invalid data. Prompts the user to press ON-LINE switch to clear Warning display. Displayed when the printer receives an unsupported PDL command.
Warn-ing	□ ERR PSE	Blink	Interpreter detects an error due to following reasons. Data received after this is ignored till the end of the job. When the job is received completely, this is automatically cleared. - The job has a grammatical error. - The page is complicated, and VM was used up.
Warn-ing	□ tttt EMPTY	Varies	Tray tttt has run out of paper. Handled as Warning until the user designates the tray that has run out of paper. * Scroll display
Warn-ing	□ TRAY2 COVER OPEN	Varies	Second Tray Cover Open * Scroll display
Warn-ing	□ FILE SYSTEM IS FULL	Varies	Flash Full has occurred. This is a transient warning. Displayed until the job is completed, then, cleared. * Scroll display
Warn-ing	□ FILE IS WRITE PROTECTED	Varies	An attempt to write in a write-protected file was made. Because this is a transient warning, it is displayed until the job is completed. then, cleared. * Scroll display
Warn-ing	□ INVALD ID.JOB REJECTED	Varies	Notifies a user that the job has been cancelled as permission for printing has not been received. (Job Account-related) This is displayed until the ON LINE key is pressed. * Scroll display.
Warn-ing	□ LOG BUFFER FULL. JOB REJECTED	Varies	Notifies a user that the job has been cancelled as the log buffer is full. (Job Account-related) This is displayed until the ON LINE key is pressed. * Scroll display.
Warn-ing	□ FILE OPERATION FAILED nnn	Varies	A FLASH error other than No.26 and No.27 has occurred. Operation that does not use FLASH is possible. * Scroll display
Error	MANUAL mmmm REQUEST	Light	Manual print request. Prompts the user to set paper indicated by mmmm manually. * Scroll display

Table 5-1 (3/5)

Status level	LCD	LED	Descroption
Error	LOAD mmm tttt EMPTY	No Light	Indicates that a print request was sent to the tttt tray that has become empty. A message for setting mmmm paper. TRAY1 TRAY2 MPF * Scroll display.
Error	CLOSE COVER TRAY2 COVER OPEN	No Light	Print request has been made to the 2nd tray route cover open. To continue, close cover. * Scroll display
Error	CHANGE PAPER TO mmmm/pppp tttt MEDIA MISMATCH	No Light	The media type in the tray and the edit media type do not match. TRAY1 TRAY2 MPF * Scroll display
Error	CHANGE PAPER TO mmmm/pppp tttt SIZE MISMATCH	No Light	The paper size in the tray and the edit size do not match. TRAY1 TRAY2 MPF * Scroll display
Error	RS232C OVERFLOW	No Light	RS232C Overflow has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	RS232C OVER RUN	No Light	RS232C Over Run has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	RS232C PRY ERR	No Light	RS232C Parity Error has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	RS232C FRM ERR	No Light	RS232C Framing Error has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	NETWORK INITIAL	Varies	Initializing (rebooting) a section related to NIC. MSG blinks only on the top LCD line. (NIC-related)
Error	TONEREMP CHG CART	No Light	Toner Low has passed, and almost no toner is left in the cartridge. For temporary operation, open/close the cover or press “ON-LINE” switch, to recover the printer operation. But basically you must change the toner cartridge. Displayed after printing 100 sheets after Toner Low was sensed, to prompt the user to change the cartridge. after this, the printer recovers with Cover Open/Close or when user presses “ON-LINE” switch, then, after printing 30 pages, this message is displayed. Even after this, the printer recovers when the user opens and closes the cover, or he presses the “ON LINE” switch, but this message is displayed for each sheet ejected. During Change Drum Alarm, however, “CHG DRUM /(the lower line spaces), not this message, is displayed, to prompt the operator to replace the drum, and prevent him from replacing the toner.
Error	MEMORY OVERFLOW	No Light	Memory capacity has overflowed due to the following reasons. To continue, press ON-LINE switch. Install expansion RAM or de-crease the data amount. - Too much print data in a page. - Too much Macro data. - Too much DLL data. - After frame buffer compression, overflow has occurred. * Scroll display
Error	OPEN UPPER COVER PAPER SIZE ERROR	No Light	Warns that paper of the inappropriate size has been fed from the tray. Check whether Multi-feed has happened. To continue for Recovery Print, open and close the cover. * Scroll display
Error	CHECK tttt PAPER JAM	No Light	Paper jam occurred when paper was being fed from tttttt tray. TRAY1 TRAY2 MPF * Scroll display
Error	OPEN UPPER COVER PAPER JAM	No Light	Jam has occurred in the paper path. Paper Feed Transport (Message of 10.5 is displayed) * PN262 does not distinguish jam type or tray. * Only Exit jam is identified. * Scroll display

Table 5-1 (4/5)

Status level	LCD	LED	Descroption
Error	OPEN UPPER COVER EXIT JAM	No Light	Jam occurred when paper was exiting. Open the cover and remove the paper inside the printer. Close the cover to continue for Recovery Print. * Scroll display
Error	CHG DRUM	No Light	Notifies the user of the drum life. For temporary operation, open/close the cover or press “ON-LINE” switch, to recover the printer operation. But basically you must change the drum. If Change Drum Alarm occurs at Toner Empty display timing, this message is displayed. This prompts the user to replace the drum, and prevent him from replacing the toner.
Error	CHECK IMAGE DRUM DRUM MISSING	No Light	Indicates that the drum is not set properly.
Error	CLOSE COVER UPPER COVER OPEN	No Light	The cover is open. UPPER Stacker * Scroll display
-	DL MODE xxxx	Varies	Downloading via NIC. The download status is indicated in the bottom line. Refer to the Network specifications for details. (NIC-related)
Error	POWER OFF/ON NETWORK ERROR	No Light	Network error has occurred. * Scroll display
-	REBOOT X	No Light	This message is displayed when the printer is rebooted. The lower display shows the code indicating the reason for the reboot. Reason Codes (X): 0: Factor(s) other than those shown below 1: PJL command reception 2: Operation panel operation 3: PostScript quit operator 4: Specification mode via network
Fatal	ERR nnn	No Light	Note: The following error names are not displayed: * Scroll display
020			CU ROM Hash Check Error 1
030			CU Slot1 DIMM RAM Check Error
034			RAM configration error
035			Slot1 RAM Spec error
040			CU EEPROM ERROR
041			CU FLASH ERROR
042			FLASH FILE SYSTEM ERROR
043			FLASH FILE SYSTEM VERSION MISMATCH
050			Operator Panel Error
051			CU FAN ERROR
063			HOST_IF_NO_DRIVER:PCI
070			CANT_HAPPEN
072			Engine communication error
073			H/W overrun detect
074			F/W Overrun detect
075			VIC Limutter
076			VIC decomp write error (reserved: for monochrome product only)
077			VIC illegal decomp error (reserved: for monochrome product only)
102			Engine RAM Error (Reserved)
103			Engine SRAM Error (Reserved)
106			Engine Control Error
120			PU Board Fan Motor Error
121			Power Supply LSI Error (Reserved)

Table 5-1 (5/5)

Status level	LCD	LED	Descroption
122	ERR nnn	No Light	Power Supply Fan Motor Error (Reserved)
123			Humidity Sensor (Reserved)
124			Temperature Sensor (Reserved)
125			Multi purpose tray home error (Reserved)
130			LED Head Over Temperature
134			LED Head Missing, Color: Black (Reserved)
143			Drum Up/Down, Color: Black (Reserved)
163			Toner Sensor Error, Color: Black
170			Upper Thermistor, State: Short
171			Upper Thermistor, State: Open
172			Upper Heater Temp, State: High
173			Upper Heater Temp, State: Low
179			Fuser Mismatch (Reserved)
180			I/F Error, Loc: Envelop feeder
182			I/F Error, Loc: Tray2
187			I/F Error,Loc: Control Panel (Reserved)
190			System Memory Overflow
200			PU F/W download check SUM error (Reserved)
201			PU F/W Flash write error (Reserved)
202			PU F/W Flash data missing (Reserved)
203			IMAGE ACK illegal page ID
204			IMAGE SET Trans error (Reserved)
205			No page at DUP IN (Reserved)
206			No page at PPOUT
207			Illegal function call
208			Parameter error
210			EM Null page cargo
211			EM Null page
212			EM No video queue
213			EM Illegal sequence
001	INITIAL- IZING	No Light	Machine check Exception
002			DSI Exception
003			ISI Exception
004			Alignment Exception
005			Program Exception
006			Floating-point unavailable Exception
007			Instruction address breakpoint Exception
008			Thermal management interrupt Exception
009			Instruction TLB miss
010			Data TLB miss
011			Data TLB store miss
Normal			Indicates that the controller side is initializing.
Normal	EEPROM RESET'NG	No Light	Indicates that EEPROM is initializing.
-	RAM CHK ********	No Light	Indicates that the RAM is being checked. * is indicated after each time one-eighth of the total space is checked.
Normal	■■■■■■■■ ■■■■■■■■	No Light	Displayed at power ON.

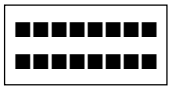
5.5.2 LCD Message Troubleshooting

If the problems cannot be corrected by using the LCD status message/problem list, follow the troubleshooting flowcharts given here to deal with them.

No.	Trouble	Flowchart number
1.	The printer does not work normally after the power is turned on.	①
2.	Jam alarm ├─Paper input jam ├─Paper feed jam └─Paper exit jam	 ②-1 ②-2 ②-3
3.	Paper size error	③
4.	Fusing unit error	④
5.	SSIO (Synchronous Serial Input/Output) error I/F timeout (no response) between the printer and an optional tray (High Capacity Second Paper Feeder, Power Envelope Feeder).	⑤
6.	Fan error	⑥

① The printer does not work normally after the power is turned on.

• Turn the power off, then back on.

• Is all black message being displayed by the LCD display? 

  • No Is the AC cord being connected properly?

    • No Connect the AC cord properly.

  Yes Is +5 V being applied between Pins 3 and 1 of PW_2 connector on the main control board?

  Pin 1 : 0 V
  Pin 3 : +5 V

    • No Is the connection between PW_1/PW_2 connector on the main control board and connector CN2 on the power supply board board being made properly?

      No Correct the connection.

    Yes Replace the power supply board.

  Yes Is +3.3 V being applied between Pins 5 (GND) and 8 of IC13?

  Pin 5 :0 V
  Pin 8 :+3.3 V

    • No Replace the main control board.

  Yes Is the flexible cable for the operator panel assy being connected to the LCDPNL connector on the main control board and the connector CN on the OPE board properly?

    • No Connect the flexible cable properly.

  Yes Replace the operator panel assy or flexible cable.

  Has the problem been solved?

    • No Replace the main control board.

  Yes End

Yes Is INITIAL-IZING message being displayed by the LCD display?

  • No Replace the main control board.

Yes Is ON-LINE XXX message being displayed by the LCD display?

  XXX: PCL, AUTO, PSE*, HEX DUMP, PPR, FX
  * PSE means Postscript 3 Emulation.

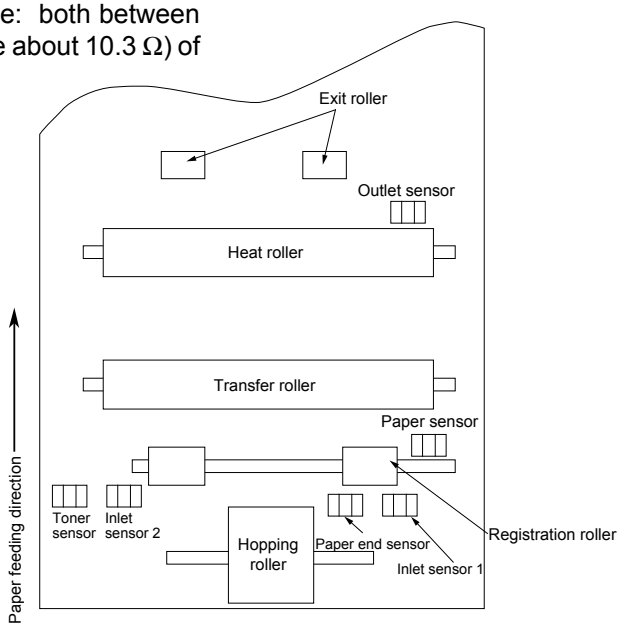
  • No Take actions according to the LCD status message/problem list (see Section 5.5.1 for corrective actions).

Yes End

[JAM error]

②-1 Paper input jam

- Does the JAM error occur when the power is turned on?
  - Yes — Is the paper at the inlet sensor?
    - • Yes — Remove the paper.
  - No — Is the operation of the inlet sensor plate normal (moves freely when it is touched)?
    - • No — Replace the inlet sensor plate.
  - Yes — Clean the inlet sensor on the high voltage/sensor board, or replace the high voltage/ sensor board.
- No — Does the JAM alarm occur after paper feeding?
  - Yes — Is the paper fed to the inlet sensor plate?
    - Yes — Is the operation of the input sensor plate normal (moves freely when it is touched)?
      - • No — Replace the inlet sensor plate.
    - Yes — Clean the inlet sensor on the high voltage/sensor board or replace the high voltage/ sensor board.
  - No — Replace the hopping roller rubber or paper cassette.
- No — Is the hopping roller rotating?
  - • Yes — Set the paper tray properly.
- No — Is the hopping motor rotating?
  - • Yes — Replace the one-way clutch gear of the hopping roller assembly.
- No — Is HM connector on the main control board being connected properly?
  - • No — Connect HM connector properly.
- Yes — Is the coil resistance (normal resistance: both between Pins 1 and 2, as well as Pins 3 and 4 are about 10.3 Ω) of the hopping motor normal?
  - • No — Replace the hopping motor.
- Yes — Replace the main control board.



[JAM error]

②-2 Paper feed jam

- Does the paper feed jam occur when the power is turned on?
  - Yes — Is the paper on the paper sensor plate?
    - • Yes — Remove the paper.
    - No — Is the operation of the paper sensor plate normal (moves freely when it is touched)?
      - • No — Replace the paper sensor plate.
      - Yes — Replace the high voltage/sensor board.
  - No — Has the paper reached the paper sensor plate?
    - No — Is the hopping roller rotating?
      - • No — Check the hopping roller assembly or tray or hopping motor.
      - Yes — Is the image drum cartridge being set properly?
        - • No — Set the image drum cartridge properly.
  - Yes — Has the paper reached the outlet sensor plate?
    - Yes — Is the operation of the outlet sensor plate normal (moves freely when it is touched)?
      - • No — Replace the outlet sensor plate.
      - Yes — Clean the outlet sensor on the high voltage/sensor board or replace the high voltage/sensor board.
  - No — Is the main/drum motor rotating?
    - No — Is DM connector on the main control board being connected properly?
      - • No — Connect DM connector properly.
      - Yes — Is the coil resistance (normal resistance: both between Pins l and 2, as well as Pins 3 and 4 are about 8.6Ω) of the main/drum motor correct ?
        - • No — Replace the main/drum motor.
        - Yes — Replace the main control board.
  - Yes — Is the transfer roller rotating?

②-2-a

②-2-a

- No Check the gears (transfer roller gear, idle gear and reduction gear).

Yes Is the fusing unit being installed properly?

- No Install the fusing unit properly.

Yes Is the image drum cartridge being set properly?

- No Set the image drum cartridge properly.

Yes Clean the paper sensor on the high voltage/sensor board or replace the high voltage/sensor board.

[JAM error]

②-3 Paper exit jam

- Does the paper exit jam error occur when the power is turned on?
  - Yes Is the paper on the outlet sensor plate?
    - Yes Remove the paper.

    No In the operation of the outlet sensor plate normal (moves freely when it is touched)?
    - No Replace the outlet sensor plate.

    Yes Clean the outlet sensor on the high voltage/sensor board or replace the high voltage/sensor board.

No Is the face-up stacker pulled out completely from the printer or, pushed into the printer completely?

- No Pull the face-up stacker out of the printer completely or push it into the printer completely.

Yes Is the eject roller assembly being installed properly?

- No Install the eject roller assembly properly.

Yes Has the coil spring come off the eject roller assembly?

- Yes Install the coil spring to the eject roller assembly.

No Replace the eject roller assembly.

③ Paper size error

• Is paper of the specified size being used?

- No Use paper of the specified size.

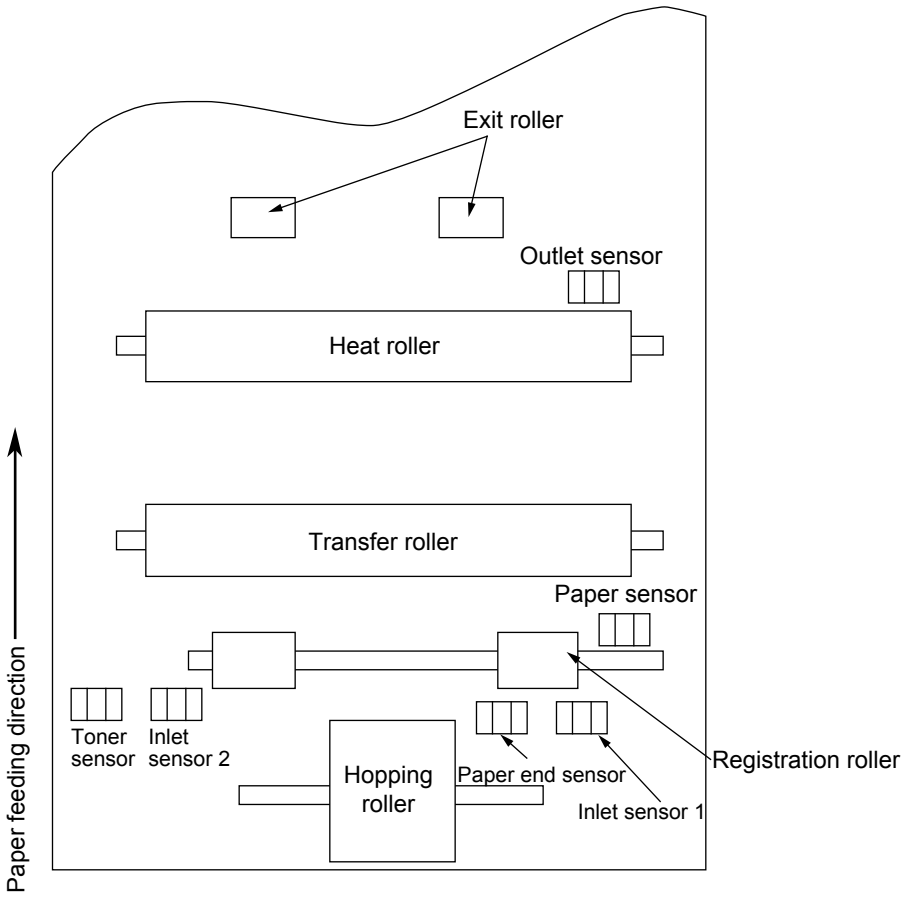
Yes Are inlet sensor plates 1 and 2 operating properly (moves freely when they are touched)?

- No Replace the inlet sensor plate or clean the inlet sensor on the high voltage/sensor board.

Yes Does the outlet sensor plate operate properly (moves freely when it is touched)?

- No Replace the outlet sensor plate or clean the outlet sensor on the high voltage/sensor board.

Yes Replace the high voltage/sensor board.



④ Fusing unit error (ERROR 170) (ERROR 171) (ERROR 172) (ERROR 173)

• Turn the power off, then back on again.

• Yes Is the thermistor open or shorted? Measure the resistance between thermistor contacts (heater contacts 120V/2Ω or 240V/7Ω, and thermistor contacts 200KΩ at room temperature) (see Figure 5-2).

  • Yes Replace the fusing unit.

• No Do the thermistor connector is connected to the main control board connector?

  • No Connect the thermistor connector property.

• Yes Is the heater of the fusing unit turned on (when the heater is turned on, light is emitted)?

  • Yes Check the thermistor connector or replace the main control board or the fusing unit.

• No Is the AC voltage being supplied to the connector for the heater of the power supply board? (see Figure 5-2)

  • No Replace the main control board or the power supply board.

• Yes Check the heater connector cord and the heater connector for poor contact .

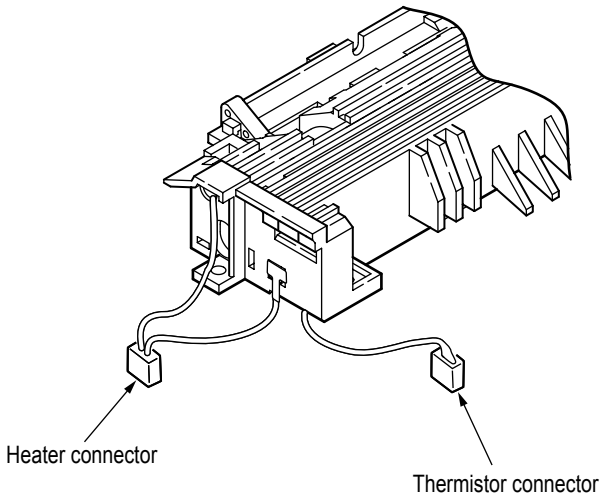


Figure 5-2

⑤ Synchronous serial I/O error or I/F timeout between printer and optional tray (ERROR 180, 182)

- Is an option tray (High Capacity Second Paper Feeder or Multi Purpose Feeder) being used?
  - Yes — Is the cable between the main control board and the optional tray being connected properly?
    - • No — Connect the cable properly.
  - Yes — Replace the main control board.
  - Has the problem been solved?
    - • No — Check the problem by following the Multi Purpose Feeder maintenance manual of Appendix F or the High Capacity Second Paper Feeder maintenance manual of Appendix G.
  - Yes — End
- No — Replace the main control board.

⑥ Fan error (ERROR 120)

- Is the fan rotating?
  - • Yes — Replace the main control board.
- No — Is FAN connector on the main control board being connected properly?
  - • No — Connect FAN connector properly.
- Yes — Replace the fan or main control board.

5.5.3 Image Troubleshooting

Procedures for troubleshooting for abnormal image printouts are explained below. Figure 5-3 below shows typical abnormal images.

Problem	Flowchart number
Images are light or blurred entirely (Figure 5-3 Ⓐ)	①
Dark background density (Figure 5-3 Ⓑ)	②
Blank paper is output (Figure 5-3 Ⓒ)	③
Black vertical belts or stripes (Figure 5-3 Ⓓ)	④
Cyclical defect (Figure 5-3 Ⓔ)	⑤
Prints voids	⑥
Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)	⑦
White vertical belts or streaks (Figure 5-3 Ⓕ)	⑧

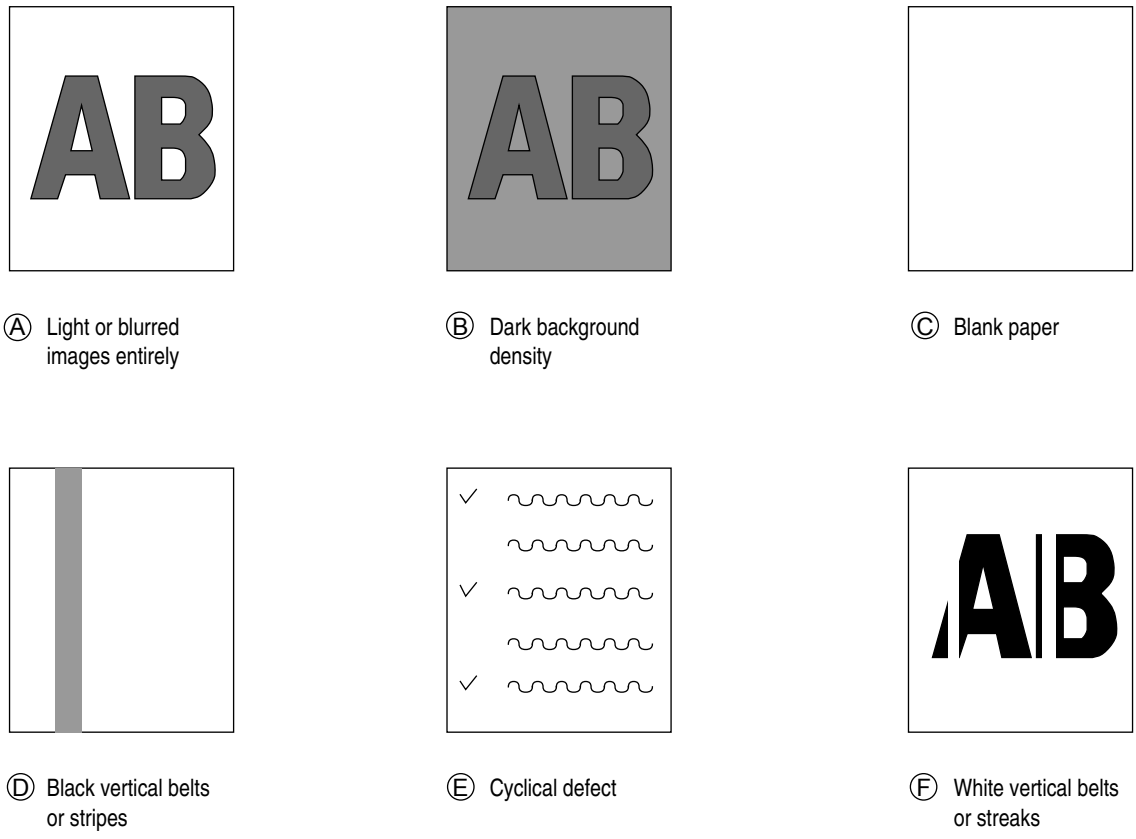

Ⓐ Light or blurred images entirely
Ⓑ Dark background density
Ⓒ Blank paper
Ⓓ Black vertical belts or stripes
Ⓔ Cyclical defect
Ⓕ White vertical belts or streaks

Figure 5-3

① Images are light or blurred entirely.

• Is toner low (is the TONER LOW message displayed)?

• Yes Supply toner.

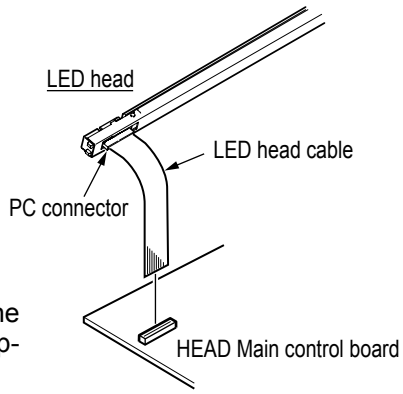
No Is paper of the specified grade being used?

• No Use paper of the specified grade.

Yes Is the lens surface of the LED head dirty?

• Yes Clean the lens.

No Is the LED head being installed properly (check the HEAD connector of the main control board and PC connector on the LED head for proper connection)?



• No Install the LED head properly.

Yes Is the contact plate of the transfer roller in contact with the contact assembly of the power supply/sensor board properly (see Figure 5-5)?

• No Adjust the contact plate of the transfer roller to make a proper contact with the high voltage/sensor board and shaft of the transfer roller.

Yes Are the contact of the developing roller and the contact of the toner supply roller of the image drum cartrige in contact with the contact assembly properly (see Figure 5-4 Ⓐ and Ⓑ)?

• No Adjust the contacts of the developing and toner supply roller to make a proper contact with the contact assembly.

Yes Replace the transfer roller.

Has the problem been solved?

• Yes End

No Replace the image drum cartridge.

Has the problem been solved?

• Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?

• No Replace the back-up roller or bias spring.

Yes Replace the main control board or high voltage/sensor board.

② Dark background density

- Has the image drum been exposed to external light?
  - • Yes Install the image drum in the printer and wait about 30 minutes.
- No Perform the cleaning page function (see Section 4.2.2).
- Has the problem been solved?
  - • Yes End
- No Is the heat roller of the fusing unit dirty?
  - • Yes Clean the heat roller.
- No Is the contact of the cleaning roller of the image drum cartridge in contact with the contact assembly properly (see Figure 5-4 Ⓒ)?
  - • No Adjust the contact of the cleaning roller to make a proper contact with the contact assembly.
- Yes Replace the image drum cartridge.
- Has the problem been solved?
  - • Yes End

    Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).
- No Replace the main control board or high voltage/sensor board.

③ Blank paper is output.

- Is the LED head being connected properly (check the HEAD connector on the main control board and PC connector on the LED head)?
  - • No Connect the LED head properly or replace the head cable.
- Yes Is the contact of the image drum cartrige in proper contact with the ground contact properly (see Figure 5-4 Ⓒ)?
  - • No Adjust the ground contact (Drum) of the contact assembly.
- Yes Replace the LED head.
- Has the problem been solved?
  - • Yes End
- No Replace the main control board or high voltage/sensor board.

④ Black vertical belts or stripes

• Perform the cleaning page function (see Section 4.2.2).

• Has the problem been solved?

- Yes End.

• No Replace the image drum cartridge.

• Has the problem been solved?

- Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

• Clean the LED lens array of the LED head.

• Has the problem been solved?

- Yes End.

• No Replace the LED head.

• Has the problem been solved?

- Yes End

• No Replace the main control board or high voltage/sensor board.

⑤ Cyclical defect

	Frequency	Remedy
Image drum	3.71" (94.2mm)	Replace or clean the image drum cartridge.
Developing roller	1.86" (47.12mm)	Replace the image drum cartridge.
Toner supply roller	2.96" (75.27mm)	Replace the image drum cartridge.
Charging roller	1.21" (30.63mm)	Replace the image drum cartridge.
Cleaning roller	0.93" (23.56mm)	Replace the image drum cartridge.
Transfer roller	1.95" (49.6mm)	Replace the transfer roller.
Heat roller	2.44" (62.0mm)	Replace the fusing unit assy.
Back-up roller	2.73" (69.4mm)	Replace the back-up roller.

Notes: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

⑥ Prints voids

• Is the contact plate of the transfer roller in proper contact with the high voltage/sensor board (see Figure 5-5)?

- • No Adjust the contact plate so that it touches the high voltage/sensor board and the shaft of the transfer roller properly.

• Yes Replace the transfer roller.

• Has the problem been solved?

- • Yes End

• No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?

- • No Replace the back-up roller or bias spring.

• Yes Are the contacts of the toner supply roller, developing roller, image drum and charging roller in proper contact with the contact assy (see Figure 5-4 Ⓐ,Ⓑ,Ⓒ,Ⓓ,Ⓔ)?

- • No Adjust the contacts so that they touch the contact assy properly.

• Yes Replace the image drum cartridge.

• Has the problem been solved?

- • Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

• No Is the LED head being installed properly (check HEAD connector on the main control board and PC Connector on the LED head)?

- • No Install the LED head properly.

• Yes Replace the LED head or the head cable.

• Has the problem been solved?

• Yes End

• No Replace the main control board or high voltage/sensor board.

⑦ Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)

- Is paper of the specified grade being used?
  - • No — Use paper of the specified grade.
- Yes — Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
  - • No — Replace the back-up roller or bias spring.
- Yes — Is the connector of the fusing unit assy on the power supply board being connected properly?
  - • No — Connect the fusing unit connector properly.
- Yes — Replace the fusing unit assy.
- Has the problem been solved?
  - • Yes — End
- No — Replace the main control board or power supply board.

⑧ White vertical belts or streaks

- Are the LED lens dirty?
  - Yes — Clean the LED lens.
- No — Is the contact plate of the transfer roller in proper contact with the high voltage/sensor board (see Figure 5-5)?
  - No — Adjust the contact plate to make a proper contact with the high voltage/sensor board.
- Yes — Replace the transfer roller.
- Has the problem been solved?
  - Yes — End
- No — Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
  - No — Replace the back-up roller or bias spring.
- Yes — Is the LED head being installed properly (check HEAD connector on the main control board and PC connector on the LED head)?
  - No — Install the LED head properly.
- Yes — Replace the LED head.
- Has the problem been solved?
  - Yes — End
- Yes — Replace the image drum cartridge.
- Has the problem been solved?
  - Yes — End

    Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).
- No — Replace the main control board or high voltage/sensor board.

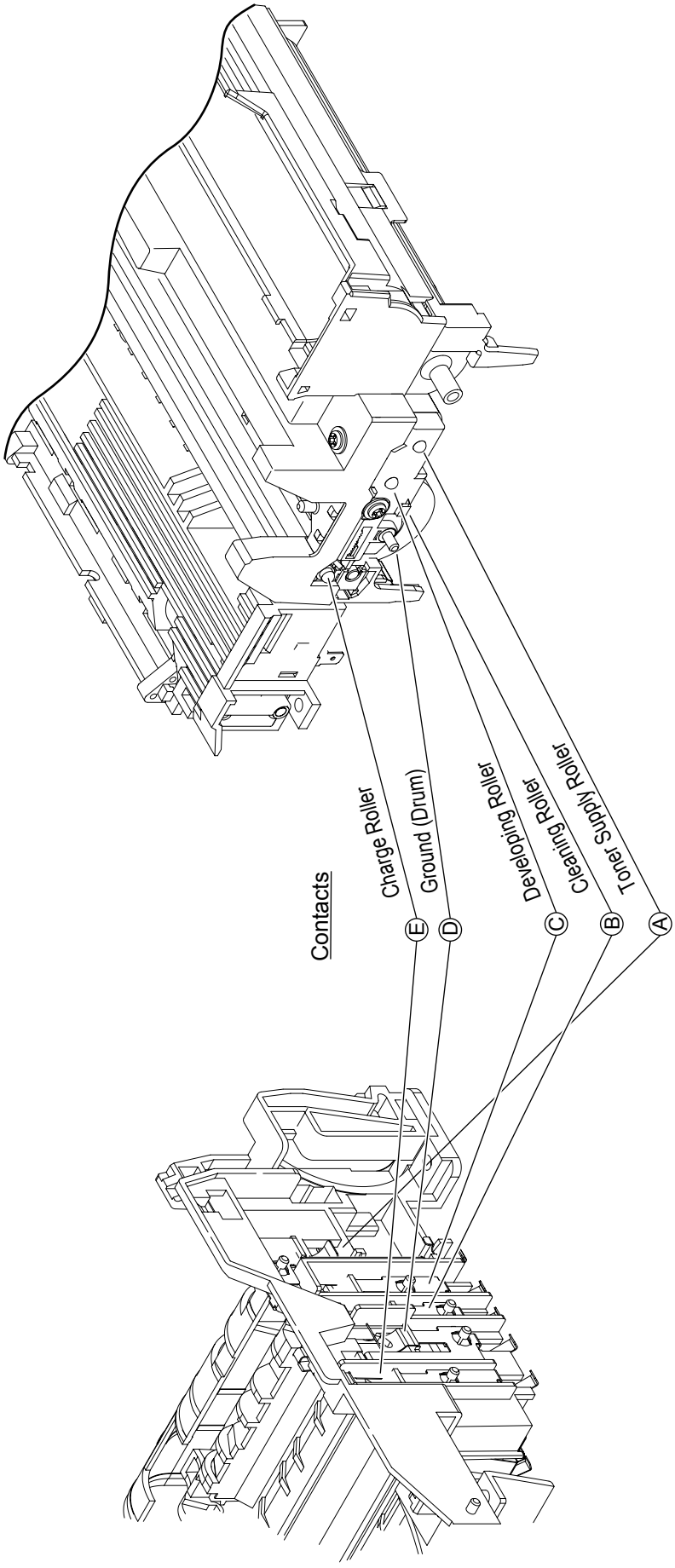

Contacts
Charge Roller
Ground (Drum)
Developing Roller
Cleaning Roller
Toner Supply Roller
E
D
C
B
A

Figure 5-4

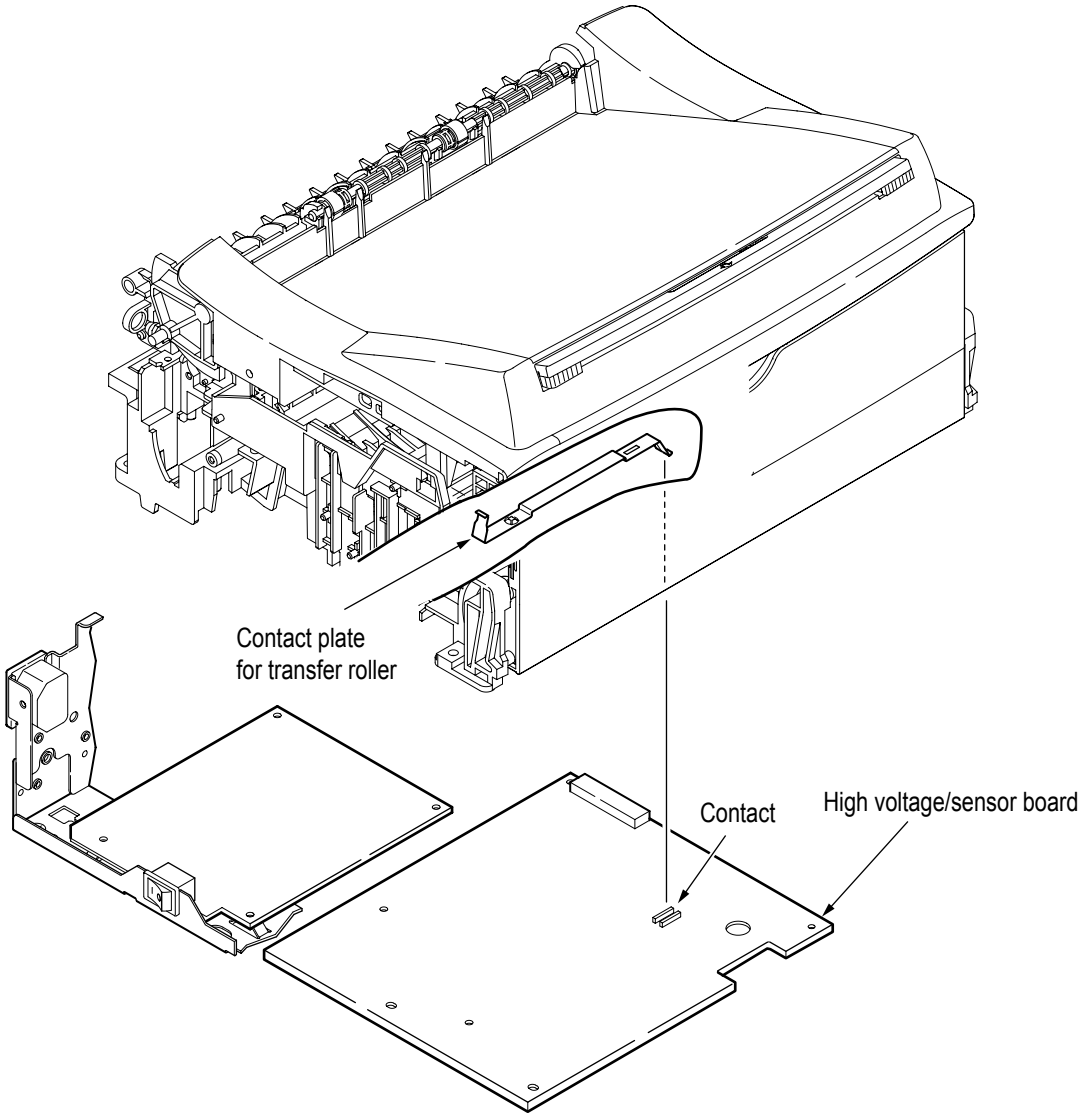
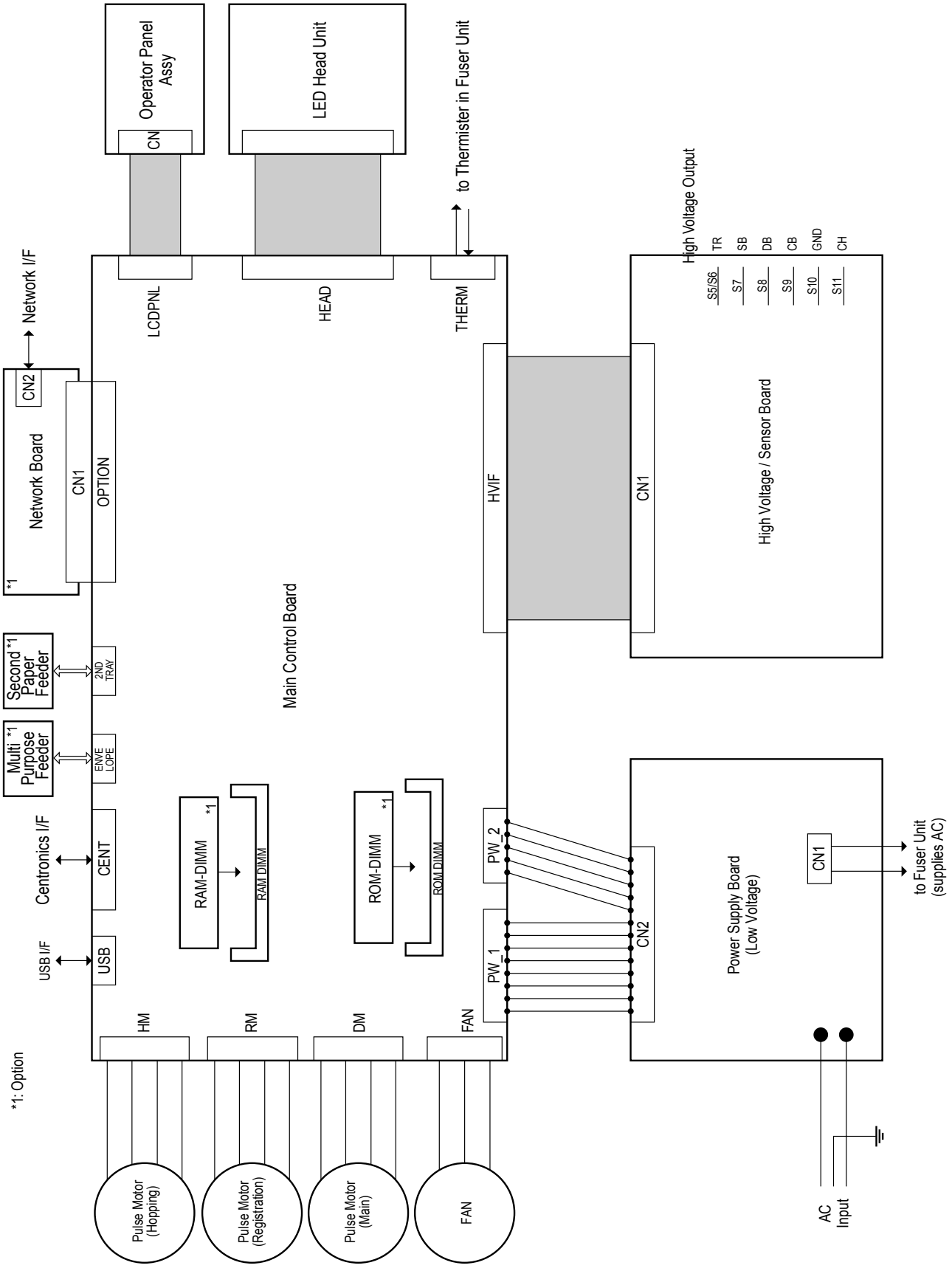

Contact plate
for transfer roller
Contact
High voltage/sensor board

Figure 5-5

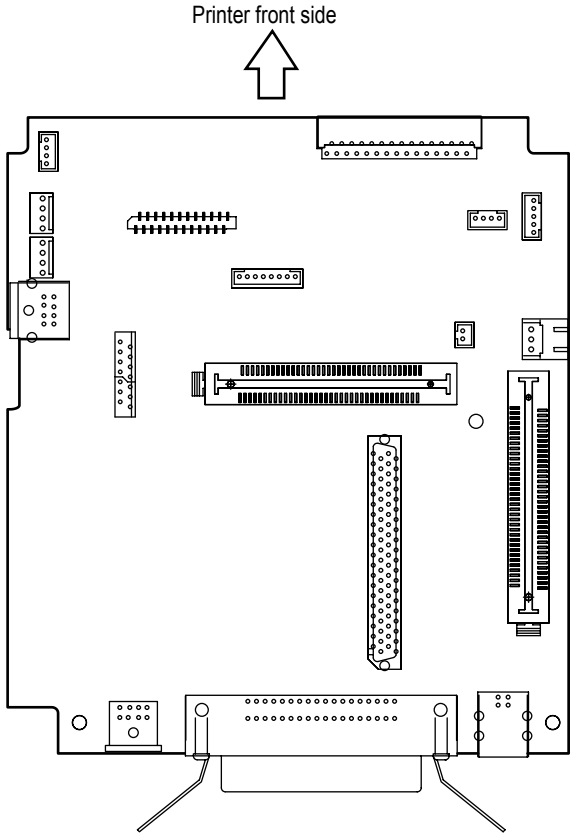
6. WIRING DIAGRAM

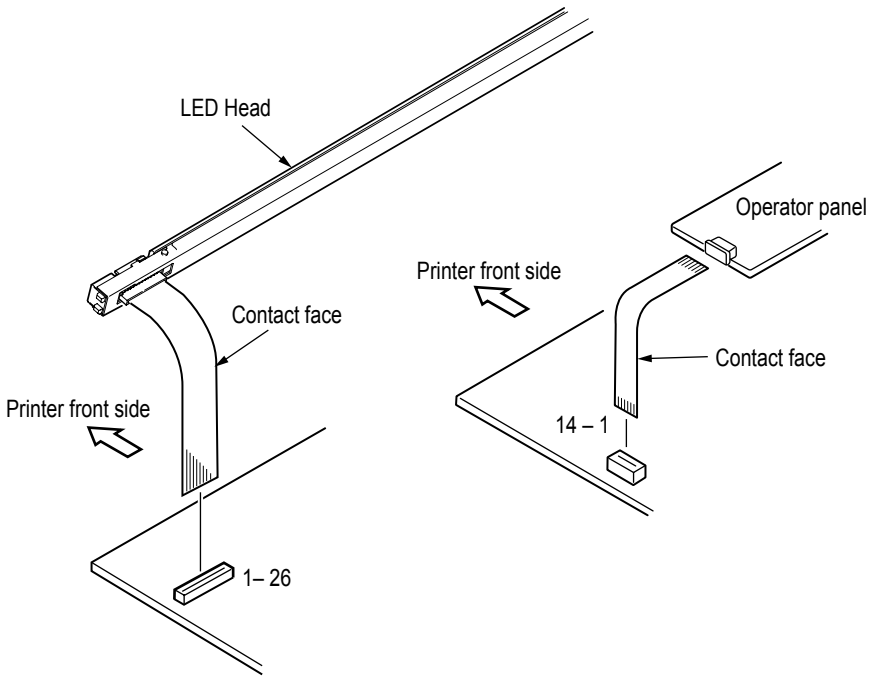
6.1 Interconnect Signal Diagram



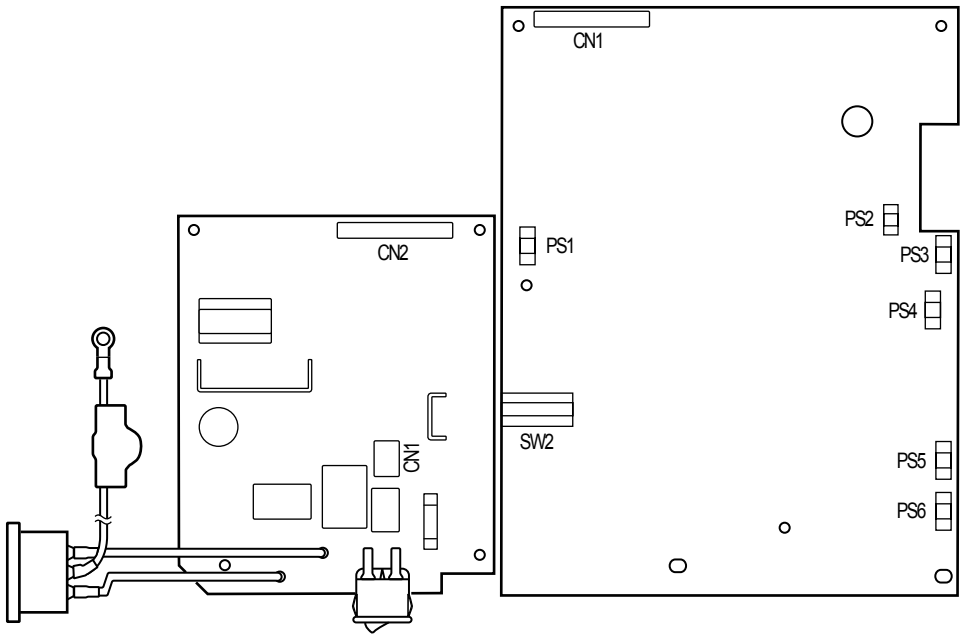
6.2 PCB Layout and Connector Signal List

(1) Main Control Board (GRV-2 PCB)





(2) Power Supply Board/High Voltage and Sensor Board



- HEAD Connector Pin Assignment
  (To LED head)

		PIN NO.	I/O*	Signal	Function
1		1	C	SG	Ground for Logic
	2	2	O	HDCLK-P	Clock
3		3	C	HDCLK-N	Clock
	4	4	C	SG	Ground for Logic
5		5	O	HDLD	Load
	6	6	O	HDSTB1	Hsync/CSN
7		7	O	HDDATA3	Data 3
	8	8	O	HDDATA2	Data 2
9		9	O	HDDATA1	Data 1
	10	10	O	HDDATA0	Data 0
11		11	O	HDSTB0	Strobe/SI
	12	12	O	HDSTB3	SCLK
13		13	O	HDSTB2	SO
	14	14	O	+3.3V	+3.3V for Logic
15		15	C	0VPHD	Ground for LED
	16	16	O	HEAD	+5V for LED
17		17	C	0VPHD	Ground for LED
	18	18	O	HEAD	+5V for LED
19		19	C	0VPHD	Ground for LED
	20	20	O	HEAD	+5V for LED
21		21	C	0VPHD	Ground for LED
	22	22	O	HEAD	+5V for LED
23		23	C	0VPHD	Ground for LED
	24	24	O	HEAD	+5V for LED

* O: Out
C: Common

- LCDPNL Connector Pin Assignment
  (To Operator Panel)

		PIN NO.	I/O*	Signal	Function
1		1	O	+5V	+5V
	2	2	O	LED-P	LED ON
3		3	I	SW-DATA1	Switch Data 1
	4	4	I	SW-DATA0	Switch Data 0
5		5	O	LCD_D3	LCD Data 3
	6	6	C	SG	Ground
7		7	O	LCD_D2	LCD Data 2
	8	8	O	LCD_D1	LCD Data 1
9		9	O	LCD_D0	LCD Data 0
	10	10	O	LCD_IRN	LCD Register Select
11		11	O	LCD_WRN	LCD Write/Read
	12	12	O	LCD_E	LCD Enable
13		13	I	SW-DATA2	Switch Data 2
	14	14	I	SW-DATA3	Switch Data 3

* I: In
O: Out
C: Common

- 2NDTRAY Connector Pin Assignment
  (To 2nd Tray)

5	8
2	7
1	4
3	6

PIN NO.	I/O*	Signal	Function
1	O	OPPAP-N	Paper Sensor 1
2	O	OPSCK-N	Clock
3	O	OPSD-N	Data
4	I	OPSDP-N	OPT send data
5	C	OVP	Analog Ground
6	O	+38V	+38V
7	C	SG	Logic Ground
8	O	+5VA	+5V

* I: In
O: Out
C: Common

- HVIF Connector Pin Assignment
  (To High Voltage Unit/Sensor Board)

		PIN NO.	I/O*	Signal	Function
1		1	I	WRSNS-N	Write Sensor
	2	2	I	IN1SNS-N	Paper Sensor 1
3		3	I	TONER-N	Toner Sensor
	4	4	I	IN2SNS-N	Paper Sensor 2
5		5	I	PAPER-N	Paper Out Sensor
	6	6	C	SG	Ground
7		7	O	SBPWN-P	SB2 Output
	8	8	O	CB2PWN-P	CB2 Output
9		9	O	DB1PWM	DB1 Output
	10	10	C	SG	Ground
11		11	O	CB1PWM	Cb1 Output
	12	12	C	SG	Ground
13		13	I	TRI_FB	TR1 Current Feedback
	14	14	I	TRV_FB	TR1 Voltage Feedback
15		15	I	DB2_V_FB	DB2 Voltage Feedback
	16	16	I	CHI	CH Current Feedback
17		17	I	CH_V_FB	CH Voltage Feedback
	18	18	I	DB_I	DB Current Feedback
19		19	I	SB_V_FB	SB2 Voltage Feedback
	20	20	C	SG	Ground
21		21	O	CHPWM-P	CH Output Control
	22	22	O	DB2PWM	DB2 Output
23		23	O	TR2PWM-P	TR2 output
	24	24	O	TR1PWM-P	TR1 Output Control
25		25	O	+5V	+5V
	26	26	O	+5V	+5V
27		27	C	SG	Ground
	28	28	C	SG	Ground
29		29	I	OUTSNS-N	Out Sensor
	30	30	I	CVOPN-N	Cover Open

* I: In
O: Out
C: Common

- PW_1 Connector Pin Assignment
  (To Power Supply Unit)

	PIN NO.	I/O*	Signal	Function
1	1	I	+38V	+38V
2	2	I	+38V	+38V
3	3	C	0VP	Analog Ground
4	4	C	0VP	Analog Ground
5	5	I	0VPHD	Ground for LED
6	6	I	0VPHD	Ground for LED
7	7	I	HEAD	+5V for LED
8	8	I	HEAD	+5V for LED

* I: In
O: Out
C: Common

- PW_2 Connector Pin Assignment
  (To Power Supply Unit)

	PIN NO.	I/O*	Signal	Function
1	1	C	SG	Ground for Logic
2	2	C	SG	Ground for Logic
3	3	I	+5V	+5V for Logic
4	4	I	+5V	+5V for Logic
5	5	O	HEATON_N	Heater On

* I: In
O: Out
C: Common

- THERM Connector Pin Assignment
  (To Thermistor)

	PIN NO.	I/O*	Signal	Function
1	1	O	+5V	+5V
2	2	I	THERM	Heater

* I: In
O: Out

- OPTION Connector Pin Assignment
  (To Option Board [Network or RS232C])

41		01	
	42		02
43		03	
	44		04
45		05	
	46		06
47		07	
	48		08
49		09	
	50		10
51		11	
	52		12
53		13	
	54		14
55		15	
	56		16
57		17	
	58		18
59		19	
	60		20
61		21	
	62		22
63		23	
	64		24
65		25	
	66		26
67		27	
	68		28
69		29	
	70		30
71		31	
	72		32
73		33	
	74		34
75		35	
	76		36
77		37	
	78		38
79		39	
	80		40

Pin No.	I/O*	Signal	Function	Pin No.	I/O*	Signal	Function
01	C	SG	Ground	41	C	SG	Ground
02	C	SG	Ground	42	C	SG	Ground
03	O	PPGNT0-N	Bus Grant (PCI)	43	I/O	PPPERR-N	Parity Error (PCI)
04	I/O	PPDVSL-N	Device select (PCI)	44	I/O	PPSERR-N	System Error (PCI)
05	I/O	PPTRDY-N	Target Ready (PCI)	45	I/O	PPSTOP-N	Stop (PCI)
06	I/O	PPFRM-N	Frame (PCI)	46	I/O	PPIRDY-N	Initiator Ready
07		NC	N.C.	47	I/O	PPPAR	Parity (PCI)
08		NC	N.C.	48		NC	N.C.
09		NC	N.C.	49		NC	N.C.
10	O	OPSCC_RXD	RXD (RS232C)	50	I	OPSCC_TXD	TXD (RS232C)
11	O	OPSCC_DSR	DSR (RS232C)	51	I	OPSCC_DTR	DTR (RS232C)
12	I/O	PPC_BE3	Command/Byte Enable 3 (PCI)	52	O	PPCLK0	Clock (PCI)
13	I/O	PPC_BE1	Command/Byte Enable 1 (PCI)	53	I/O	PPC_BE2	Command/Byte Enable 2 (PCI)
14	I	PRINT0-N	Interrupt (PCI)	54	I/O	PPC_BE0	Command/Byte Enable 0 (PCI)
15	O	PERIWR-N	FlashROM Write Enable	55	I	PPREQ0-N	Bus Request (PCI)
16	O	NICFROM_CS	FlashROM Chip Select	56	O	PERIRD-N	FlashROM Read Enable
17	I/O	SDT22	AD Bus 22	57	I/O	SDT23	AD Bus 23
18	I/O	SDT20	AD Bus 20	58	I/O	SDT21	AD Bus 21
19	C	SG	Ground	59	C	SG	Ground
20	C	SG	Ground	60	C	SG	Ground
21	I/O	SDT18	AD Bus 18	61	I/O	SDT19	AD Bus 19
22	I/O	SDT16	AD Bus 16	62	I/O	SDT17	AD Bus 17
23	I/O	SDT25	AD Bus 25	63	I/O	SDT24	AD Bus 24
24	I/O	SDT27	AD Bus 27	64	I/O	SDT26	AD Bus 26
25	I/O	SDT29	AD Bus 29	65	I/O	SDT28	AD Bus 28
26	I/O	SDT31	AD Bus 31	66	I/O	SDT30	AD Bus 30
27	I/O	SDT9	AD Bus 9	67	I/O	SDT8	AD Bus 8
28	I/O	SDT11	AD Bus 11	68	I/O	SDT10	AD Bus 10
29	I/O	SDT13	AD Bus 13	69	I/O	SDT12	AD Bus 12
30	I/O	SDT15	AD Bus 15	70	I/O	SDT14	AD Bus 14
31	I/O	SDT6	AD Bus 6	71	I/O	SDT7	AD Bus 7
32	I/O	SDT4	AD Bus 4	72	I/O	SDT5	AD Bus 5
33	I/O	SDT2	AD Bus 2	73	I/O	SDT6	AD Bus 3
34	I/O	SDT0	AD Bus 0	74	I/O	SDT1	AD Bus 1
35	I	OPNIC-N	NIC Detect	75	I	OPNICSW-N	NIC Push Switch
36	O	RESET-N	Reset	76	I	OPSCC-N	RS232C Detect
37		NC	N.C.	77	C	SG	Ground
38	C	SG	Ground	78	C	SG	Ground
39	C	SG	Ground	79	O	+5V	+5V
40	O	+5V	+5V	80	O	+5V	+5V

* O : Out
I : In
C : Common

- FAN Connector Pin Assignment
  (To Fan)

1
2
3

PIN NO.	I/O*	Signal	Function
1	O	FANPOW	Power Supply for Fan driving
2	C	SG	Ground
3	I	FANALM-P	Fan Alarm

* I: In
O: Out
C: Common

- USB Connector Pin Assignment
  (USB I/F)

1	3
2	4

PIN NO.	I/O*	Signal	Description
1	I	VCC	VCC
2	I/O	D-	D-
3	I/O	D+	D+
4	C	SG	Ground

* I: In
O: Out
C: Common

- CENT Connector Pin Assignment
  (IEEE1284 I/F)

1	19
2	20
3	21
4	22
5	23
6	24
7	25
8	26
9	27
10	28
11	29
12	30
13	31
14	32
15	33
16	34
17	35
18	36

Pin No.	I/O*	Signal	Function	Pin No.	I/O*	Signal	Function
1	I	STB-N	Strobe	19	C	SG	Logic Ground
2	C	DATA0-P	Data0	20	C	SG	Logic Ground
3	C	DATA1-P	Data1	21	C	SG	Logic Ground
4	C	DATA2-P	Data2	22	C	SG	Logic Ground
5	C	DATA3-P	Data3	23	C	SG	Logic Ground
6	C	DATA4-P	Data4	24	C	SG	Logic Ground
7	C	DATA5-P	Data5	25	C	SG	Logic Ground
8	C	DATA6-P	Data6	26	C	SG	Logic Ground
9	C	DATA7-P	Data7	27	C	SG	Logic Ground
10	O	ACK-N	Acknowledge	28	C	SG	Logic Ground
11	O	BUSY-P	Busy	29	C	SG	Logic Ground
12	O	PE-P	Paper End	30	C	SG	Logic Ground
13	O	SEL-P	Select	31	I	IPRIM-N	Iprime
14	I	AUTOFEED-N	Auto Feed	32	O	FAULT-N	Fault
15		NC	N.C.	33	C	SG	Logic Ground
16	C	SG	Logic Ground	34		NC	N.C.
17	C	FG	Frame Ground	35	O	HILEVEL	High Level
18	O	5VA	+5V	36	I	SELIN-N	Select In

* O : Out
I : In
C : Common

- HM Connector Pin Assignment
  (To Hopping Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	HMPH1-P	Coil 1-P
2	2	O	HMPH1-N	Coil 1-N
3	3	O	HMPH2-P	Coil 2-P
4	4	O	HMPH2-N	Coil 2-N

* O: Out

- RM Connector Pin Assignment
  (To Resistration Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	RMPH1-P	Coil 1-P
2	2	O	RMPH1-N	Coil 1-N
3	3	O	RMPH2-P	Coil 2-P
4	4	O	RMPH2-N	Coil 2-N

* O: Out

- DM Connector Pin Assignment
  (To Main Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	DMPH1-P	Coil 1-P
2	2	O	DMPH1-N	Coil 1-N
3	3	O	DMPH2-P	Coil 2-P
4	4	O	DMPH2-N	Coil 2-N

* O: Out

- ROM_DIMM Connector Pin Assignment

Pin No.	I/O*	Signal	Function
01	C	SG	Ground
02		NC	N.C.
03		NC	N.C.
04		NC	N.C.
05		NC	N.C.
06		NC	N.C.
07		NC	N.C.
08		NC	N.C.
09		NC	N.C.
10	O	+3.3V	+3.3V
11		NC	N.C.
12		NC	N.C.
13		NC	N.C.
14		NC	N.C.
15	C	SG	Ground
16	C	SG	Ground
17		NC	N.C.
18		NC	N.C.
19		NC	N.C.
20		NC	N.C.
21	I/O	DBUS11	Data Bus 11
22	I/O	DBUS4	Data Bus 4
23	I/O	DBUS3	Data Bus 3
24	I/O	DBUS12	Data Bus 12
25	I/O	DBUS10	Data Bus 10
26	I/O	DBUS5	Data Bus 5
27	C	SG	Ground
28	C	SG	Ground
29	I/O	DBUS2	Data Bus 2
30	O	+3.3V	+3.3v
31	I/O	DBUS9	Data Bus 9
32	I/O	DBUS13	Data Bus 13
33	I/O	DBUS1	Data Bus 1
34	I/O	DBUS6	Data Bus 6
35	I/O	DBUS8	Data Bus 8
36	I/O	DBUS14	Data Bus 14

Pin No.	I/O*	Signal	Function
37	I/O	DBUS0	Data Bus 0
38	I/O	DBUS7	Data Bus 7
39	C	SG	Ground
40	C	SG	Ground
41	O	WBEN0	Write Enable
42	I/O	DBUS15	Data Bus 15
43	O	CPU_CS3-N	Chip select 3
44	O	CPU_OE-N	Output Enable
45	O	ABUS14	Address Bus 14
46	O	CPU_CS2-N	Chip select 2
47	O	ABUS15	Address Bus 15
48	O	ABUS30	Address Bus 30
49	O	ABUS16	Address Bus 16
50	O	ABUS29	Address Bus 29
51	O	ABUS17	Address Bus 17
52	O	ABUS28	Address Bus 28
53	O	ABUS18	Address Bus 18
54	O	ABUS27	Address Bus 27
55	O	ABUS19	Address Bus 19
56	O	ABUS26	Address Bus 26
57	O	ABUS20	Address Bus 20
58	O	ABUS25	Address Bus 25
59	O	ABUS21	Address Bus 21
60	O	ABUS24	Address Bus 24
61	O	+3.3V	+3.3v
62	O	ABUS23	Address Bus 23
63	O	ABUS22	Address Bus 22
64	O	ABUS13	Address Bus 13
65	O	ABUS11	Address Bus 11
66	O	ABUS12	Address Bus 12
67	O	ABUS10	Address Bus 10
68	O	ABUS9	Address Bus 9
69	O	ABUS8	Address Bus 8
70	O	ABUS7	Address Bus 7
71	O	RESET-N	Reset
72	C	SG	Ground

* O : Out
I : In
C : Common

- RAM_DIMM Connector Pin Assignment

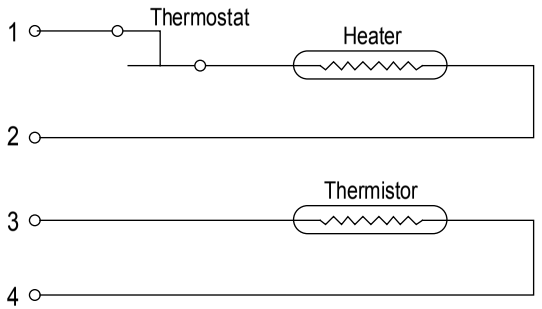
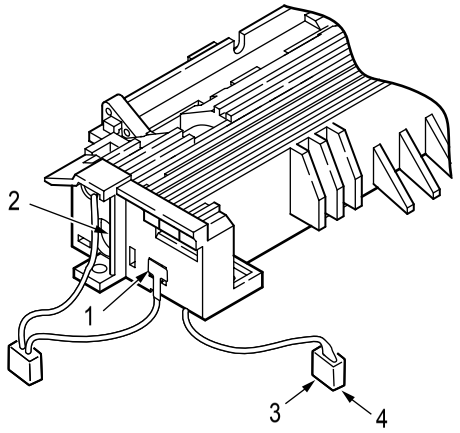
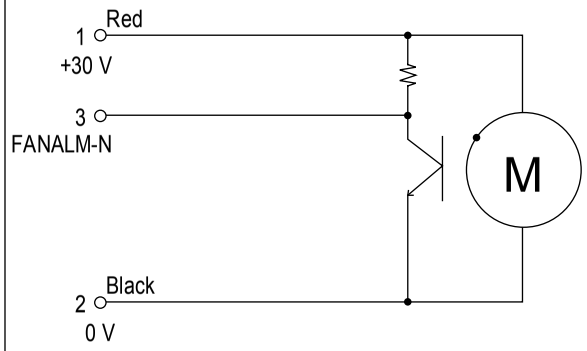
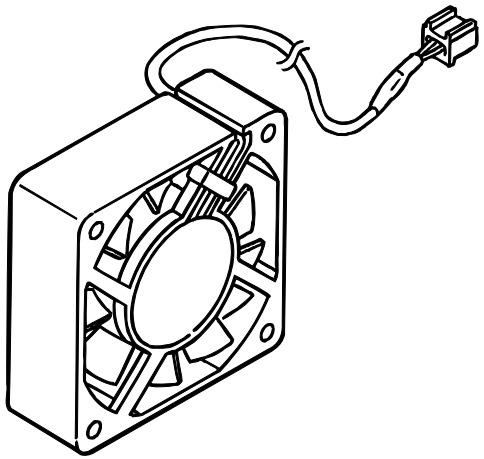
Pin No.	I/O*	Signal	Function
01	C	SG	Ground
02		NC	N.C.
03		NC	N.C.
04		NC	N.C.
05		NC	N.C.
06		NC	N.C.
07		NC	N.C.
08		NC	N.C.
09		NC	N.C.
10	O	+3.3V	+3.3V
11		NC	N.C.
12		NC	N.C.
13		NC	N.C.
14		NC	N.C.
15	C	SG	Ground
16	C	SG	Ground
17		NC	N.C.
18		NC	N.C.
19		PERIRD-N	N.C.
20		NC	N.C.
21		NC	N.C.
22	O	RAM_CS2-N	Chip select 2
23		NC	N.C.
24	O	SAD3	Address Bus 3
25	O	RAM_CLK1	Clock
26	O	SAD2	Address Bus 2
27	C	SG	Ground
28	C	SG	Ground
29	O	SAD4	Address Bus 4
30	O	+3.3V	+3.3v
31	O	SAD5	Address Bus 5
32	O	SAD1	Address Bus 1
33	O	SAD6	Address Bus 6
34	O	SAD0	Address Bus 0
35	O	SAD7	Address Bus 7
36	O	SAD10	Address Bus 10

Pin No.	I/O*	Signal	Function
37	O	SAD8	Address Bus 8
38	O	SAD13	Address Bus 13
39	C	SG	Ground
40	C	SG	Ground
41	O	SAD9	Address Bus 9
42	O	SAD12	Address Bus 12
43	O	SAD11	Address Bus 11
44	O	RAM_CS1-N	Chip select 1
45		PERIWR-N	Address Bus 14
46	O	RAM_RAS-N	Row Address
47	O	RAM_CKE-N	Clock Enable
48	C	SG	Ground
49	O	RAM_CLK1	Clock
50	O	RAM_CAS-N	Column Address Strobe
51	O	RAM_DQM1	Byte Enable 1
52	O	RAM_WE-N	Write Enable
53	I/O	SDT8	Data Bus 8
54	O	RAM_DQM0	Write Enable 0
55	I/O	SDT9	Data Bus 9
56	I/O	SDT7	Data Bus 7
57	I/O	SDT10	Data Bus 10
58	I/O	SDT6	Data Bus 6
59	I/O	SDT11	Data Bus 11
60	I/O	SDT5	Data Bus 5
61	O	+3.3V	+3.3v
62	I/O	SDT4	Data Bus 4
63	I/O	SDT12	Data Bus 12
64	I/O	SDT3	Data Bus 3
65	I/O	SDT13	Data Bus 13
66	I/O	SDT2	Data Bus 2
67	I/O	SDT14	Data Bus 14
68	I/O	SDT1	Data Bus 1
69	I/O	SDT15	Data Bus 15
70	I/O	SDT0	Data Bus 0
71	I	OPRAM-N	RAM-DIMM Detect
72	C	SG	Ground

* O : Out
I : In
C : Common

6.3 Resistance Check

Unit	Circuit Diagram	Illustration	Resistance
Registration motor			Between Pins 1 and 2: 7.9Ω Between Pins 3 and 4: 7.9Ω
Main/drum motor			Between Pins 1 and 2: 8.6Ω Between Pins 3 and 4: 8.6Ω
Hopping motor			Between Pins 1 and 2: 10.3Ω Between Pins 3 and 4: 10.3Ω

Unit	Circuit Diagram	Illustration	Resistance
Fusing unit			Between Pins 1 and 2: 120V 2Ω 240V 7Ω Between Pins 3 and 4: 200KΩ (at room temperature)
Fan			

Oki Data CONFIDENTIAL

APPENDIX A RS-232C SERIAL INTERFACE (option)

1) Connector

- Printer side : 25-pin receptacle
  Type DB-25S (made by Canon) or equivalent
- Cable side : 25-pin plug
  Type DB-25S (made by Canon)
  Shell
  Type DB-C8-J10-F2-1 (made by Nihon Kouku Denshi) or equivalent

Note: Plug shall be fixable with a lock screw.

2) Cable

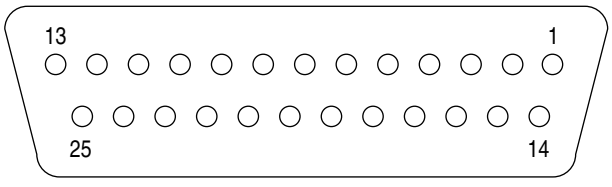
- Cable length : 6 ft (1.8 m) max. (cable shall be shielded)

Note: Cable is not provided.

3) Interface signal

Pin No.	Signal name	Abbreviation	Signal direction	Functions
1	Frame Ground	FG		Frame Ground
2	Transmitted Data	TD	← PR	Transmitted Data
3	Received Data	RD	→ PR	Received Data
4	Request to Send	RTS	← PR	Stay space level
5	-			(Not connected)
6	-			(Not connected)
7	Signal Ground	SG		Signal Ground
9 ~ 17	-			(Not connected)
18	-			(Not connected)
19	-			(Not connected)
20	Data Terminal Ready	DTR	← PR	Data terminal ready
21 ~ 25	-			(Not connected)

- Connector pin arrangement



(View from the cable side)

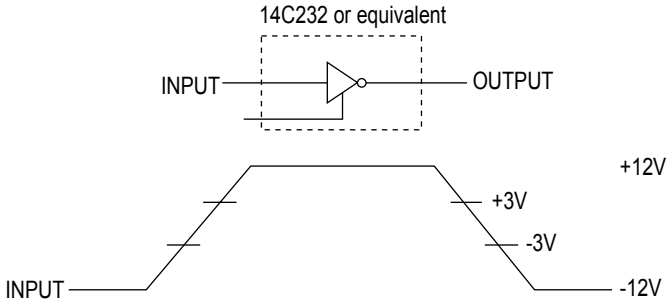
When the Ready/Busy protocol is used for the buffer busy control method, the busy signal can be set to Pin-20 (DTR) in the menu.

4) Signal Level

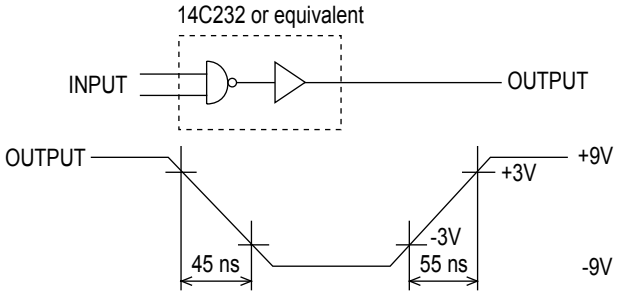
- MARK polarity : -3V to -15V (LOGIC = 1)
- SPACE polarity : +3V to +15V (LOGIC = 0)

5) Interface Circuit

a) Receiving Circuit



b) Sending Circuit



Note: The signal levels described above is for the case where 3K Ω x 15pF is connected to the terminal.

6) Receive Margin

37% min. at all reception rates.

7) Communications Protocol

a) READY/BUSY protocol
b) X-ON/X-OFF protocol

8) Interface Parameter Setting

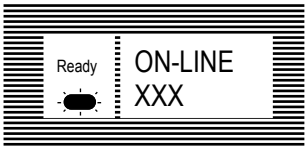
Press MENU key several times.

Press ITEM key to display the item on the LCD to set up.

Press VALUE key to display the value on the LCD to set up.

Press SELECT key, and display "*" mark on the right side of the value:

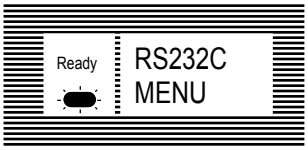
By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



XXX : PCL, AUTO, PSE*, HEX DUMP, PRR or FX

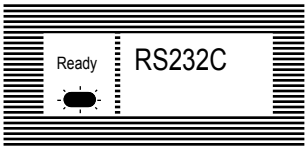
* PSE means POSTSCRIPT 3 EMULATION.

Press the MENU key 9 times.



"RS232C MENU" is displayed on the LCD.

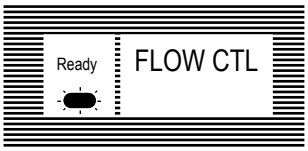
Press the SELECT key.



Item	RS232C I/F
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

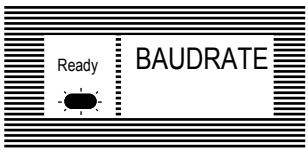
Press the ITEM + key.



Item	Flow CTL
Contents of Display	Function
DTR HI	SPACE-READY
DTR LO	MARK-READY
XONXOFF	
RbstXON	Sending at intervals of 1 sec.

Factory Setting: DTR HI

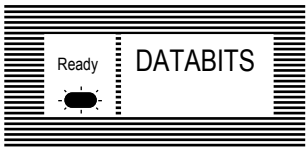
Press the ITEM + key.



Item	Baud Rate
Contents of Display	Function
300	300 baud
600	600 baud
1200	1200 baud
2400	2400 baud
4800	4800 baud
9600	9600 baud
19200	19200 baud
38400	38400 baud
57600	57600 baud
76800	76800 baud
115200	115200 baud

Factory Setting: 9600 baud

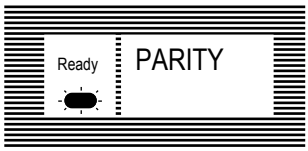
Press the ITEM + key.



Item	Bit Length
Contents of Display	Function
8 BITS	8 bits
7 BITS	7 bits

Factory Setting: 8 bit

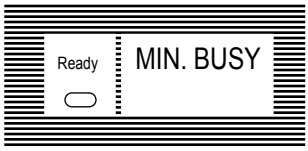
Press the ITEM + key.



Item	Parity
Contents of Display	Function
NONE	No parity
EVEN	Even parity
ODD	Odd parity

Factory Setting: NONE

Press the ITEM + key.

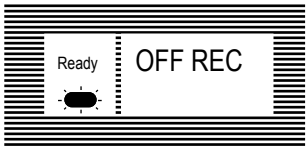


Item	Minimum BUSY Time
Contents of Display	Function
200 m SEC	200 ms
1 SEC	1 sec (1000 ms)

Factory Setting: 200 m SEC

(PCL only)

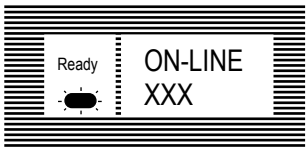
Press the ITEM + key.



Item	RS232C I/F OFF-LINE RECEIVE
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

Press the ON LINE key.



Setting completed.

XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

APPENDIX B CENTRONICS PARALLEL INTERFACE

1) Connector

- Printer side : 36-pin receptacle
  (single port) Type 57RE-40360-730B-D29A (made by Daiichi Denshi), CN-AX05841A36AT (made by Ougat) or equivalent
- Cable side : 36-pin plug
  Type 57-30360 (made by Daiichi Denshi) or equivalent
  Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

2) Cable

- Cable length : 6 ft (1.8 m) max.

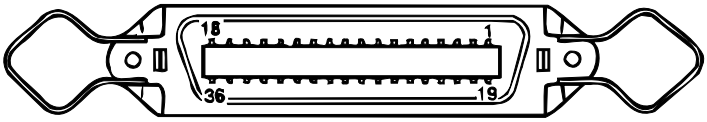
(A Shielded cable composed of twisted pair wires is recommended for noise prevention.)

Note: Cable is not supplied with the printer, and is not available from Oki.

3) Table of Parallel I/F Signals

Pin No.	Signal name	Signal direction	Functions
1	$\overline{\text{DATA STROBE}}$	→ PR	Parallel data sampling strobe
2	DATA BIT - 1	→ PR	PR Parallel input and output data
3	DATA BIT - 2		
4	DATA BIT - 3		
5	DATA BIT - 4		
6	DATA BIT - 5		
7	DATA BIT - 6		
8	DATA BIT - 7		
9	DATA BIT - 8		
10	$\overline{\text{ACKNOWLEDGE}}$	← PR	Completion of data input or end of a function
11	BUSY	← PR	During print processing or alarm
12	PAPER END	← PR	End of paper
13	SELECT	← PR	Select state (ON-LINE)
14	$\overline{\text{AUTOFEED}}$	→ PR	Request to change mode
15	-		(Not used)
16	0V		Signal ground
17	CHASSIS GROUND		Chassis ground
18	+5V	← PR	50 mA max.
19 ⋮ 30	0V		Signal ground
31	$\overline{\text{INPUT PRIME}}$	→ PR	Initializing signal
32	$\overline{\text{FAULT}}$	← PR	End of paper or during alarm
33	-		Signal ground
34	-		(Not used)
35	-		High level (3.3 kΩ)
36	$\overline{\text{SELECT IN}}$	→ PR	Request to change mode

• Connector pin arrangement



4) Signal Level

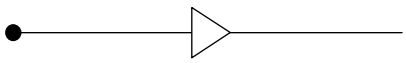
- INPUT
  Low : 0 V to +0.4 V
  High : +2.4 V to 5.0 V
- OUTPUT
  Low : 0 V to +0.4 V
  High : +2.0 V to 5.0 V

5) Specifications

Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits (in the compatibility mode)
Input prime	Valid/Invalid
Receive buffer	0.1M, 0.2M, 0.5M Bytes
Control	Handshaking control is performed in each mode. Data received from the host is stored in the receive buffer. Busy control is performed. Signal lead control is performed.

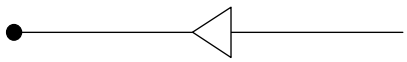
6) Interface circuit

a) Receiving circuit



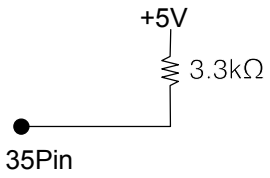
LVC161284

b) Sending circuit



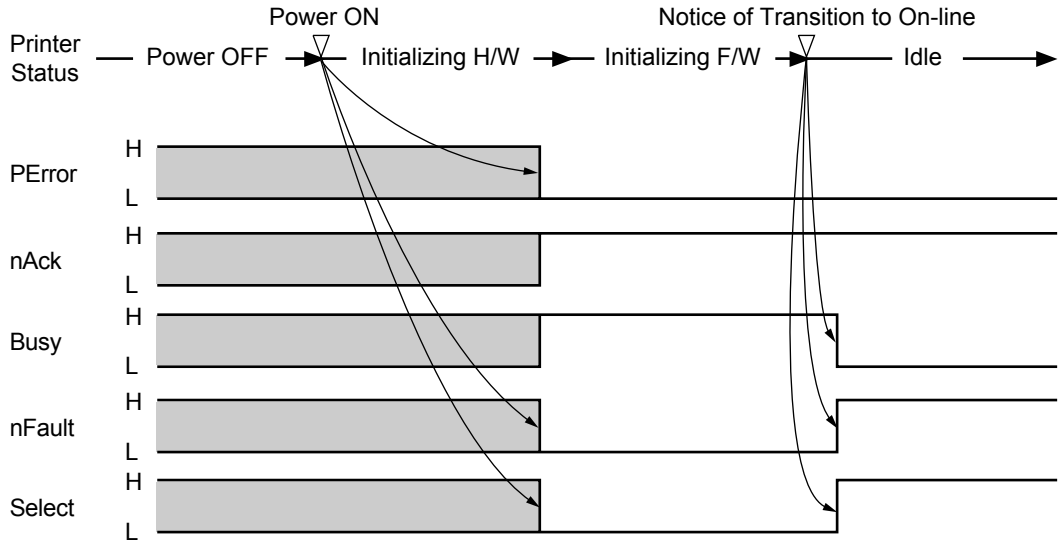
LVC161284

c) Other

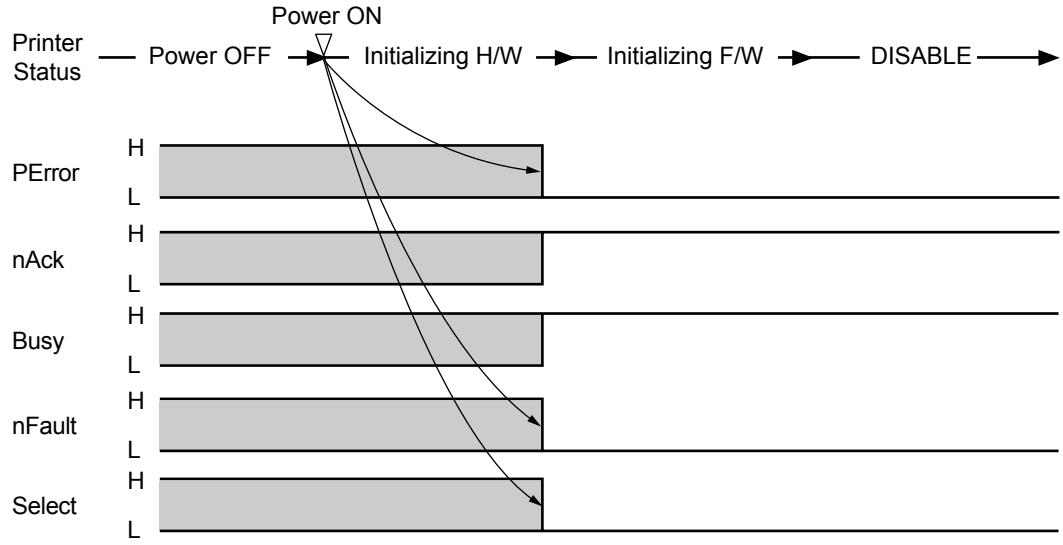


7) Timing charts

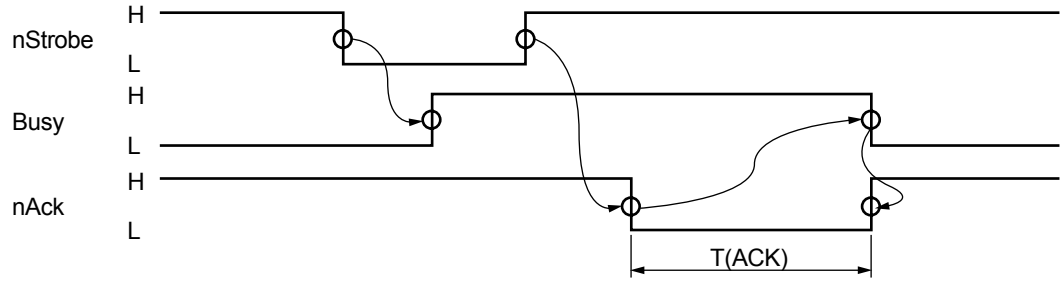
a) Power-ON (Menu Setting: PARALLEL=ENABLE)



b) Power-ON (Menu Setting: PARALLEL=DISABLE)

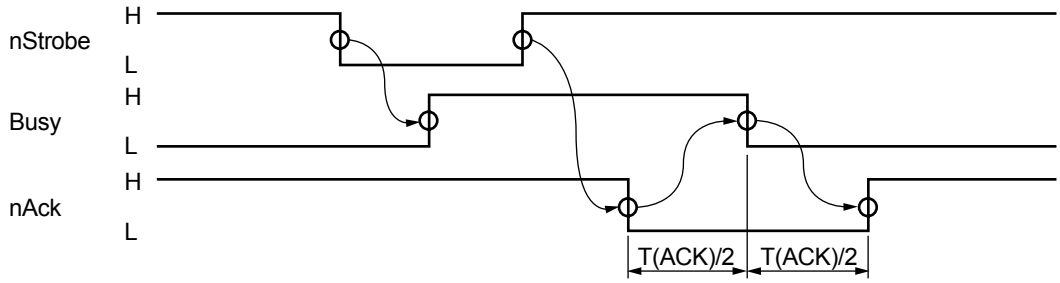


c) Data Reception (Menu Setting: Ack/Busy Timing=Ack in Busy)



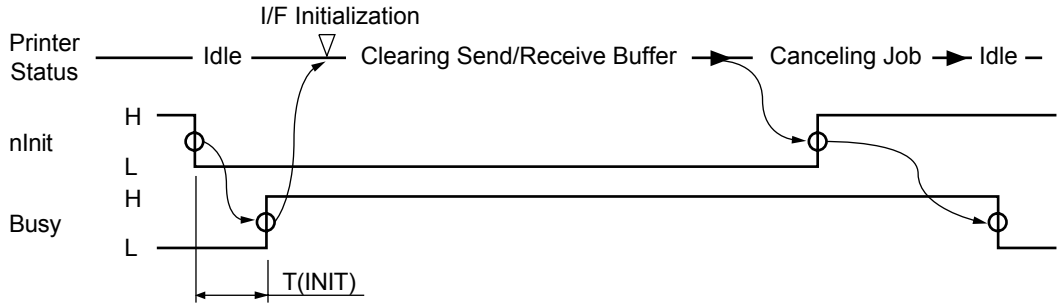
Menu Setting (Ack Width)	NARROW	MEDIUM	WIDE
T(ACK)	0.5µs	1.0µs	3.0µs

d) Data Reception (Menu Setting: Ack/Busy Timing=Ack while Busy)



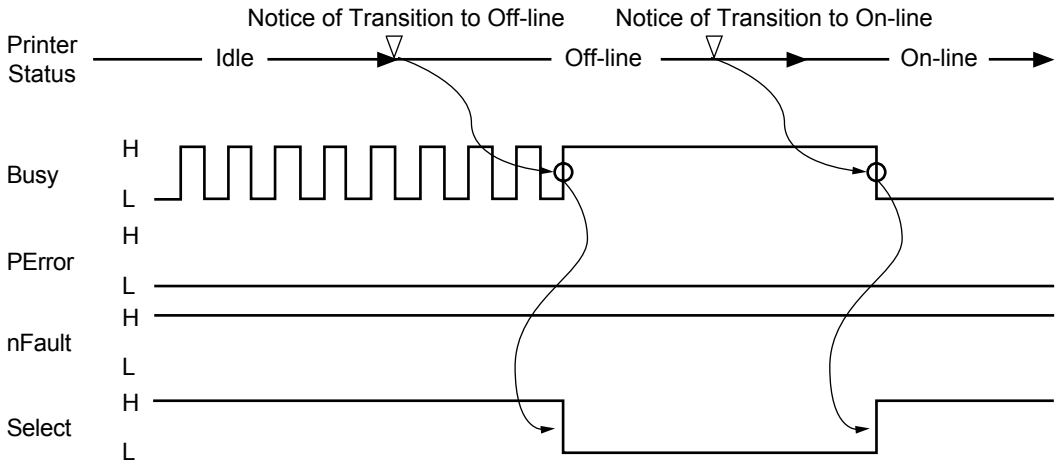
* The T (ACK) values are the same as those shown in the section c).

e) I-Prime (Not at menu-set I-PRIME=DISABLE)

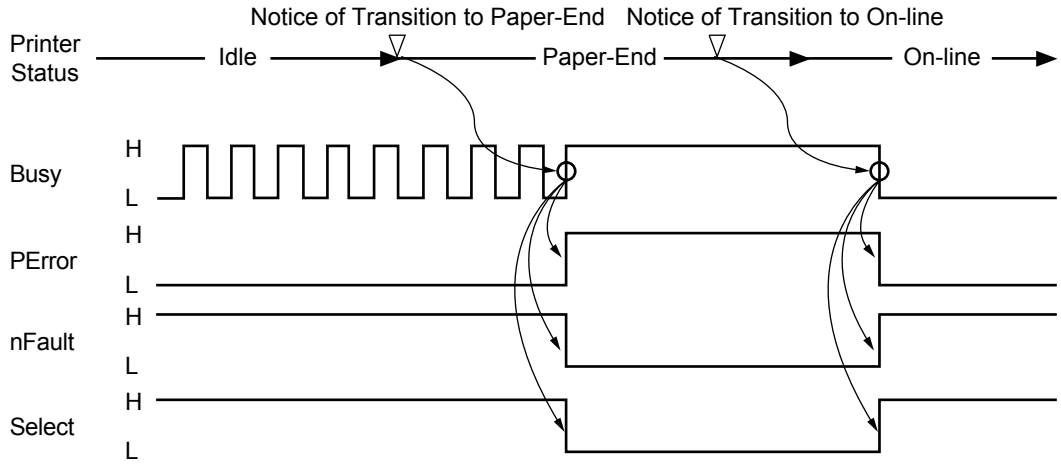


Menu Setting (I-PRIME)	3 MICRON SEC	50 MICRON SEC
T(INIT)	2.0µs	33.3µs

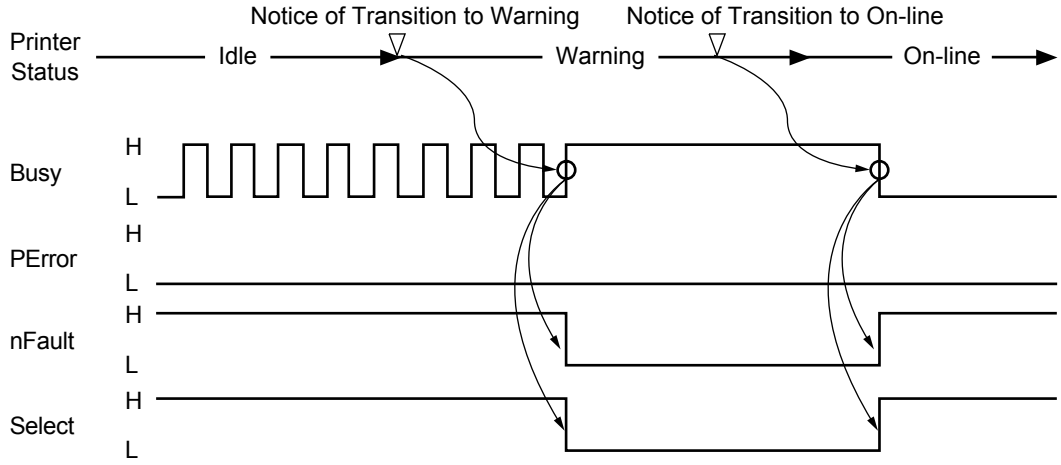
f) Off-line



g) Paper-End



h) Warning (Paper-end state is excluded)

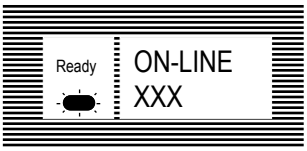


7) Interface Parameter Setting

The following settings are possible by pressing the SELECT key, after selecting the display contents of the LCD of the operator panel by using the ITEM+ and ITEM- keys.

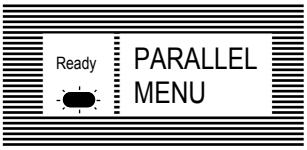
Settings are retained even when the printer power is turned off.

By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



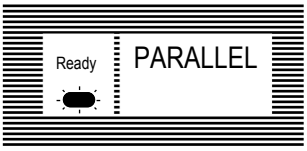
XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

Press the MENU key 8 times.



"PARALLEL MENU" is displayed on the LCD.

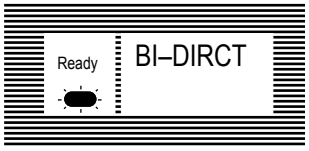
Press the SELECT key.



Item	PARALLEL I/F
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

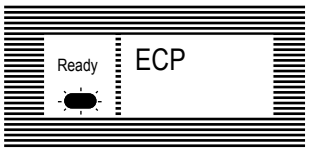
Press the ITEM + key.



Item	Direction of Data Transfer
Contents of Display	Function
ENABLE	Bi-directional data transmission
DISABLE	Uni-directional data transmission

Factory Setting: ENABLE

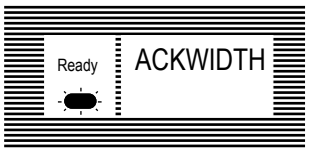
Press the ITEM + key.



Item	ECP Mode
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

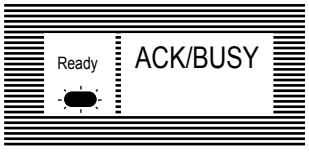
Press the ITEM + key.



Item	ACK Width in compatible
Contents of Display	Function
NARROW	0.5µs
MEDIUM	1.0µs
WIDE	3.0µs

Factory Setting: NARROW

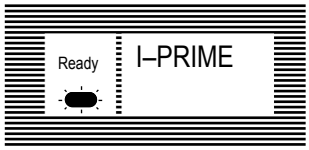
Press the ITEM + key.



Item	Output order of BUSY and ACK signal
Contents of Display	Function
IN	ACK IN BUSY: BUSY=LOW→the end of ACK pulse
WHILE	ACK WHILE BUSY: BUSY=LOW→Center of ACK pulse

Factory Setting: IN

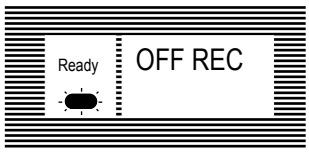
Press the ITEM + key.



Item	I-PRIME
Contents of Display	Function
3µ SEC	Enabled with the 3µs nInit signal
50µ SEC	Enabled with the 50µs nInit signal
DISABLE	DISABLE

Factory Setting: DISABLE

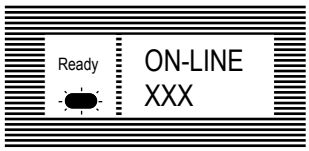
Press the ITEM + key.



Item	PARALLEL I/F OFF-LINE RECEIVE
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: DISABLE

Press the ON LINE key.



Setting completed.

XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

APPENDIX C Universal Serial Bus (USB)

Universal Serial Bus Specification Revision 2.0 full speed compliance.

1) Connector

- Printer Side : “B” Receptacle (Upstream Input to the USB Device)
- Cable Side : Series “B” Plug

2) Cable

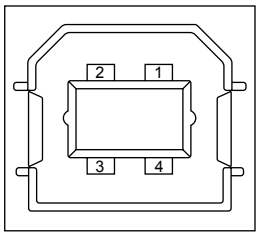
- Cable Length : Max 5m (A cable must be met USB Spec Rev 1.1 for normal operation)

Note: Cable is not provided.

3) Table of USB I / F signals

Contact Number	Signal Name
1	Vbus
2	D -
3	D +
4	GND
Shell	Shield

4) Connector pin arrangement



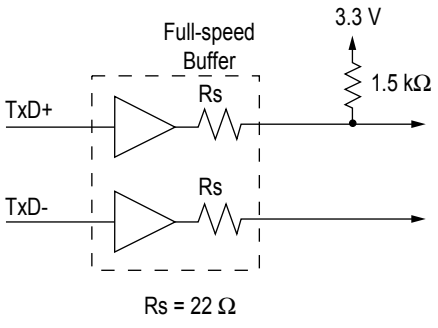
5) Mode & Class of Device

- Full - speed Driver
- Self - powered Device

6) Data Signaling Rate

- Full - speed function - 12Mb/s

7) Interface circuit



8) Signal Level

• Input / Output Level

Parameter	Symbol	Min.	Max.	Units
Input Levels :				
High (driven)	V_{IH}	2.0		V
High (floating)	V_{IHZ}	2.7	3.6	V
Low	V_{IL}		0.8	V
Output Levels :				
Low	OL	0.0	0.3	V
High (driven)	OH	2.8	3.6	V
Output Signal Crossover Voltage	V_{CRS}	1.3	2.0	V

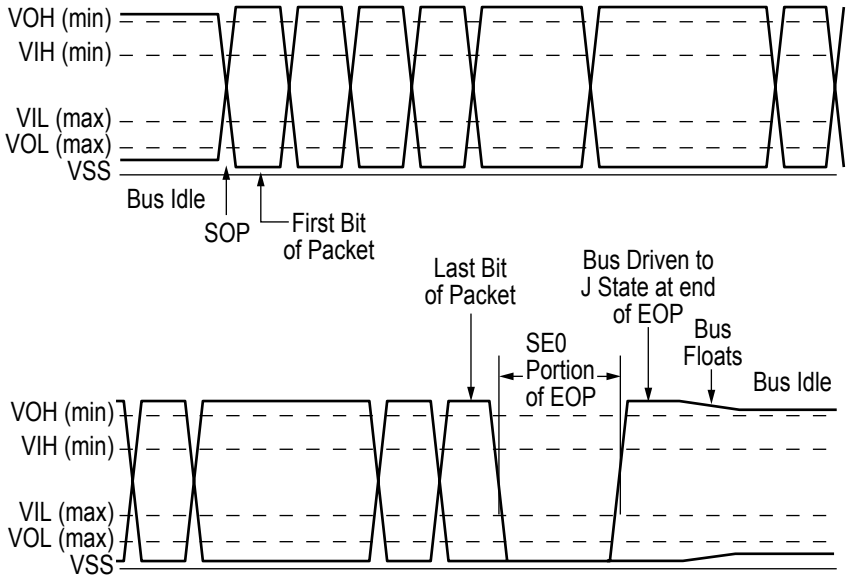
• Signaling Levels

Bus State	Signaling Levels	
	Required	Acceptable
Differential "1"	(D+) - (D-) > 200mV and D+ > V_{IH} (min)	(D+) - (D-) > 200mV
Differential "0"	(D-) - (D+) > 200mV and D- > V_{IH} (min)	(D-) - (D+) > 200mV
Single-ended 0 (SE0)	D+ and D- < V_{IL} (max)	D+ and D- < V_{IH} (min)
Data J state: Low-speed Full-speed	 Differential "0" Differential "1"	
Data K state: Low-speed Full-speed	 Differential "1" Differential "0"	
Idle state: Low-speed Full-speed	 D- > V_{IHZ} (min) and D+ < V_{IL} (max) D+ > V_{IHZ} (min) and D- < V_{IL} (max)	 D- > V_{IHZ} (min) and D+ < V_{IH} (min) D+ > V_{IHZ} (min) and D- < V_{IH} (min)
Resume state	Data K state	
Start-of-Packet (SOP)	Data lines switch from Idle to K state	
End-of-Packet (EOP)	SE0 for ≥ 1 bit time[1] followed by a J state for 1 bit time	SE0 for ≥ 1 bit time[1] followed by a J state
Disconnect (at downstream port)	SE0 for ≥ 2.5μs	
Connect (at downstream port)	Idle for ≥ 2ms	Idle for ≥ 2.5μs
Reset	D+ and D- < V_{IL} (max) for ≥ 10ms	D+ and D- < V_{IL} (max) for ≥ 2.5μs

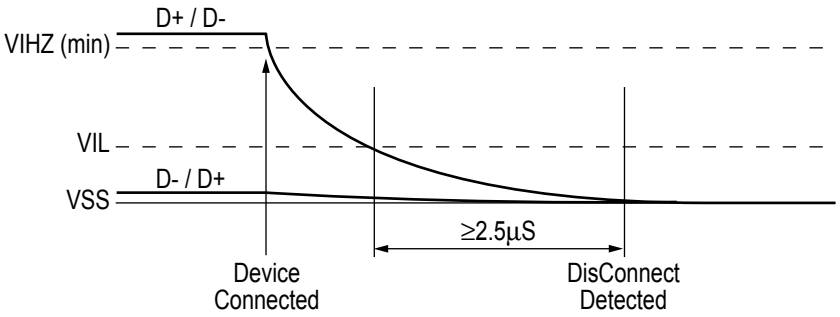
Note: The width of EOP is defined in bit times relative to the device type receiving the EOP. The bit time is approximate.

9) Timing Chart

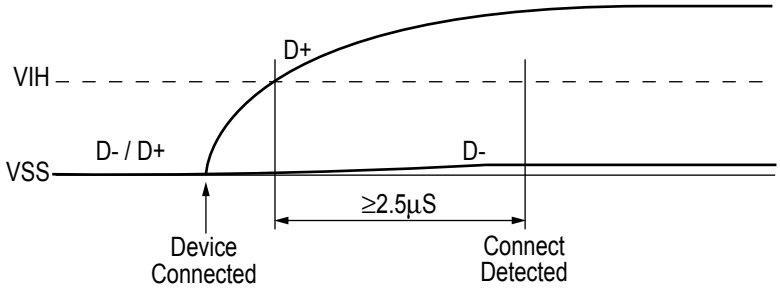
a) Packet Voltage Levels



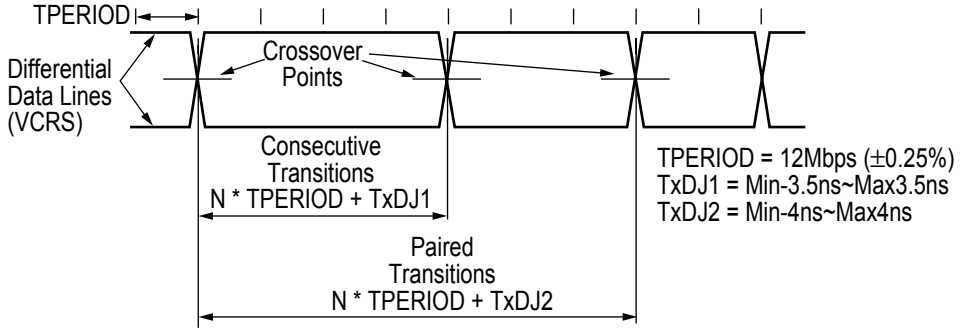
b) Disconnect Detection



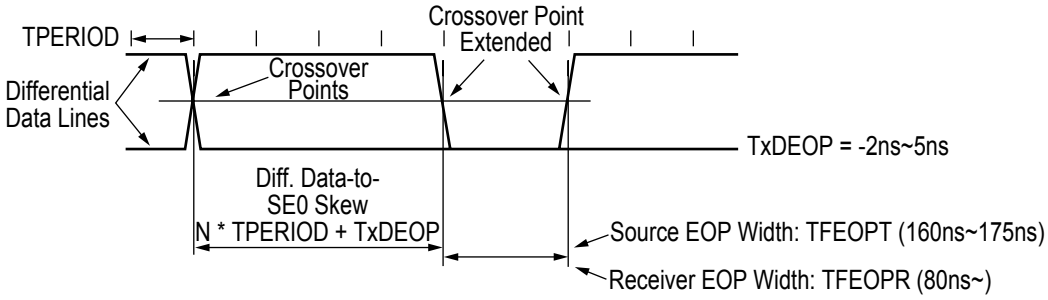
c) Full-speed Device Connect Detection



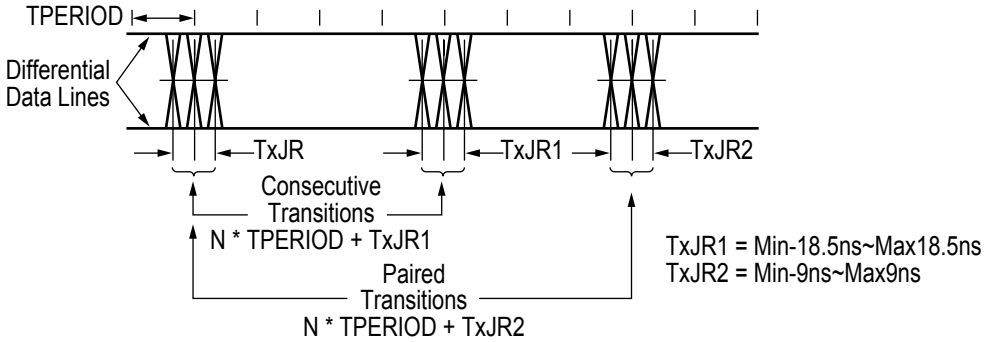
d) Differential Data Jitter



e) Differential-to-EOP Transition Skew and EOP Width



f) Receiver Jitter Tolerance



10) Interface Parameter Setting

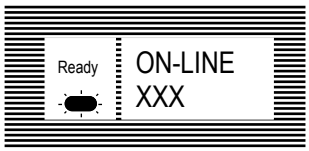
Press MENU key several times.

Press ITEM key to display the item on the LCD to set up.

Press VALUE key to display the value on the LCD to set up.

Press SELECT key, and display "*" mark on the right side of the value:

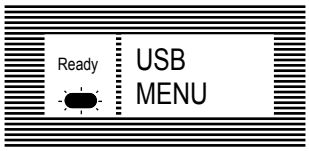
By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



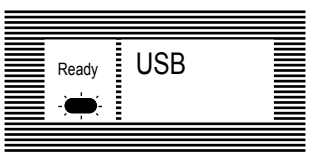
XXX : PCL, AUTO, PSE*, HEX DUMP, PRR or FX

* PSE means POSTSCRIPT3 EMULATION.

Press the MENU key 9 times.
(If RS232C is installed, press the MENU key 10 times.)



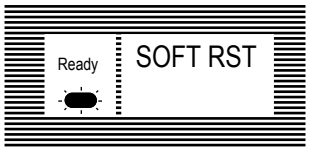
Press the ITEM + key.



Item	USB I/F
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

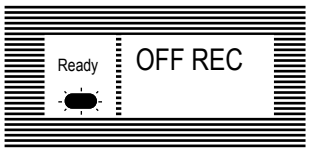
Press the ITEM + key.



Item	Sets Soft Reset command
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: DISABLE

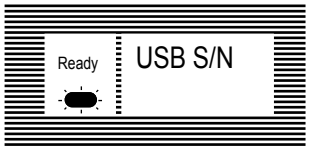
Press the ITEM + key.



Item	USB I/F OFF-LINE RECEIVE
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: DISABLE

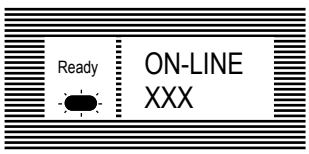
Press the ITEM + key.



Item	USB Serial Number
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

Press the ON LINE key.

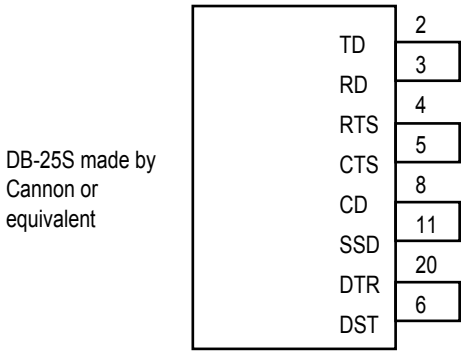


Setting completed.

XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

APPENDIX D LOOP TEST (RS-232C INTERFACE)

1) Connect the test connector



Test Connector Connection Diagram

2) Select "LOOP Test" in the system maintenance mode.
The codes transmitted from the TD signals are comparatively checked with the data received from the RD signals. If any error occurs, the error message is displayed on the LCD.

APPENDIX E DIAGNOSTICS TEST

1. Maintenance Modes

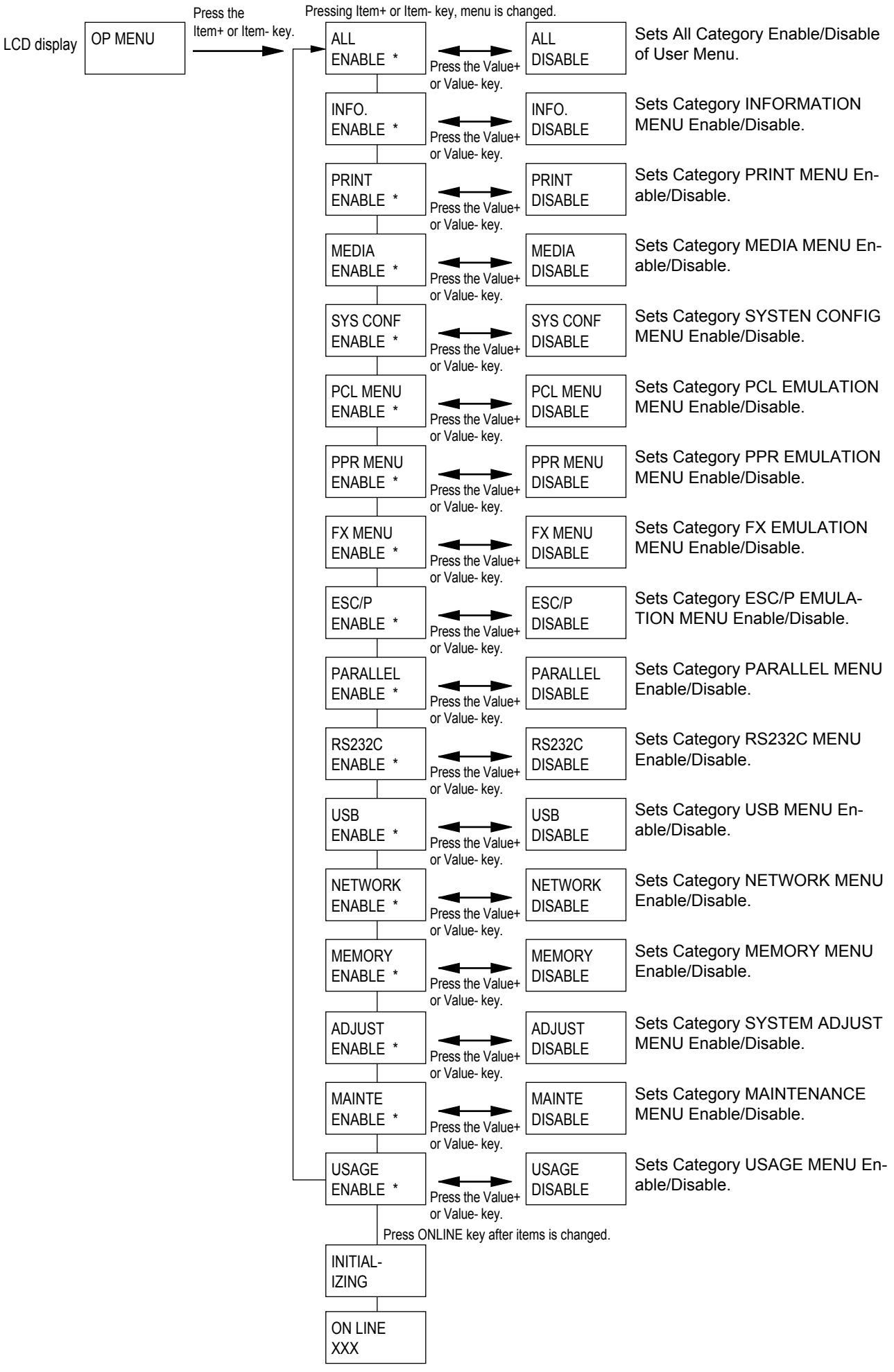
- The maintenance modes consist of the user maintenance mode which are released to the user, and the system and engine maintenance modes in the maintenance personnel level not released to the user.
- Press the MENU key to update each category. The operation returns to the first category after updating the last category, in a loop.
- Press the Enter key to execute the function being displayed.
- To exit from any of these modes during a category display, press the *Recover* or ON LINE key and the operation mode will start.

1.1 Administrator Mode

- To enter the administrator mode, turn the power on while keeping the ITEM+/ITEM- key pressed down.
- This mode uses the menu for function selection.
- The administrator mode provides the following functions.

(1) OP MENU

- This function sets each user menu Enable or Disable.


LCD display
OP MENU
Press the Item+ or Item- key.
Pressing Item+ or Item- key, menu is changed.
ALL ENABLE *
ALL DISABLE
Press the Value+ or Value- key.
Sets All Category Enable/Disable of User Menu.
INFO. ENABLE *
INFO. DISABLE
Sets Category INFORMATION MENU Enable/Disable.
PRINT ENABLE *
PRINT DISABLE
Sets Category PRINT MENU Enable/Disable.
MEDIA ENABLE *
MEDIA DISABLE
Sets Category MEDIA MENU Enable/Disable.
SYS CONF ENABLE *
SYS CONF DISABLE
Sets Category SYSTEN CONFIG MENU Enable/Disable.
PCL MENU ENABLE *
PCL MENU DISABLE
Sets Category PCL EMULATION MENU Enable/Disable.
PPR MENU ENABLE *
PPR MENU DISABLE
Sets Category PPR EMULATION MENU Enable/Disable.
FX MENU ENABLE *
FX MENU DISABLE
Sets Category FX EMULATION MENU Enable/Disable.
ESC/P ENABLE *
ESC/P DISABLE
Sets Category ESC/P EMULATION MENU Enable/Disable.
PARALLEL ENABLE *
PARALLEL DISABLE
Sets Category PARALLEL MENU Enable/Disable.
RS232C ENABLE *
RS232C DISABLE
Sets Category RS232C MENU Enable/Disable.
USB ENABLE *
USB DISABLE
Sets Category USB MENU Enable/Disable.
NETWORK ENABLE *
NETWORK DISABLE
Sets Category NETWORK MENU Enable/Disable.
MEMORY ENABLE *
MEMORY DISABLE
Sets Category MEMORY MENU Enable/Disable.
ADJUST ENABLE *
ADJUST DISABLE
Sets Category SYSTEM ADJUST MENU Enable/Disable.
MAINTE ENABLE *
MAINTE DISABLE
Sets Category MAINTENANCE MENU Enable/Disable.
USAGE ENABLE *
USAGE DISABLE
Sets Category USAGE MENU Enable/Disable.
Press ONLINE key after items is changed.
INITIAL-IZING
ON LINE XXX

1.2 System Maintenance Mode

- To enter the system maintenance mode, turn the power on while keeping the Menu/ITEM+/VALUE-/CANCEL keys pressed down.
- This mode adopts the menu for function selection.
- The system maintenance mode provides the following functions:

(1) Oki User

- Brands is set.

(2) Maintenance Menu

- Flash ROM Format.
- EEPROM reset to factory default.

(3) Configration Menu

- Changes operater panel Type1 or Type2.

(4) Engine Start Print

- Engine menu is printed.

(5) Page Count Display

- This function allows the selection to include (enable) or exclude (disable) the total number of printed pages counted at the engine block at the time of menu printing.

(6) Emulate

- Emulate determines the default PDL for each brand.

(7) Loop Test

- The loop test is for testing the serial I/F functions without connecting the printer to the host.
- The data is sent and received by loop back in the loop test.
- The loop test is performed even when another interface is being selected in Menu level-2.
- Installation of the loop connector is necessary for the loop test (refer to Appendix C, LOOP TEST (RS-232C INTERFACE)).

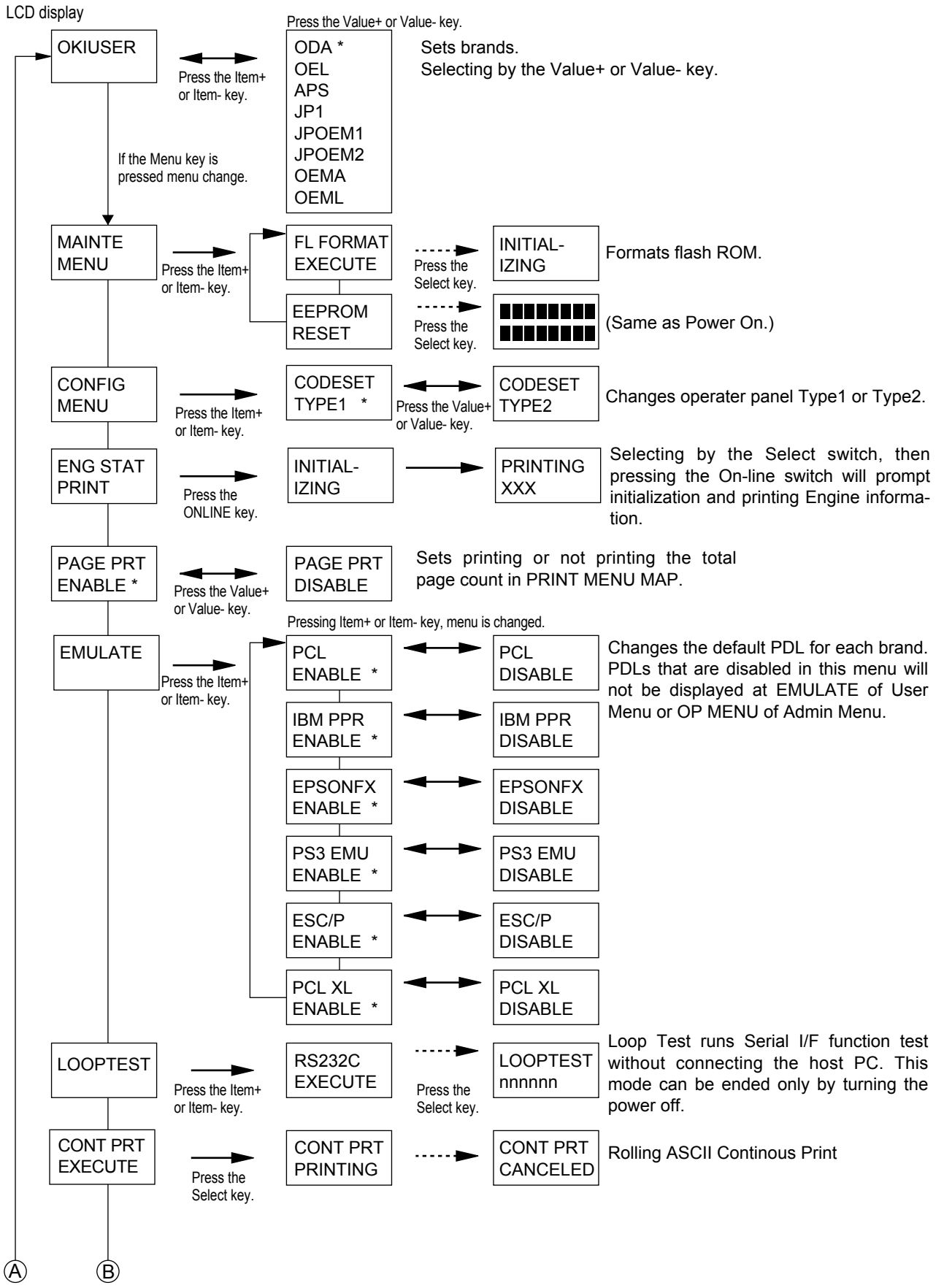
(8) Rolling ASCII Continuous Printing

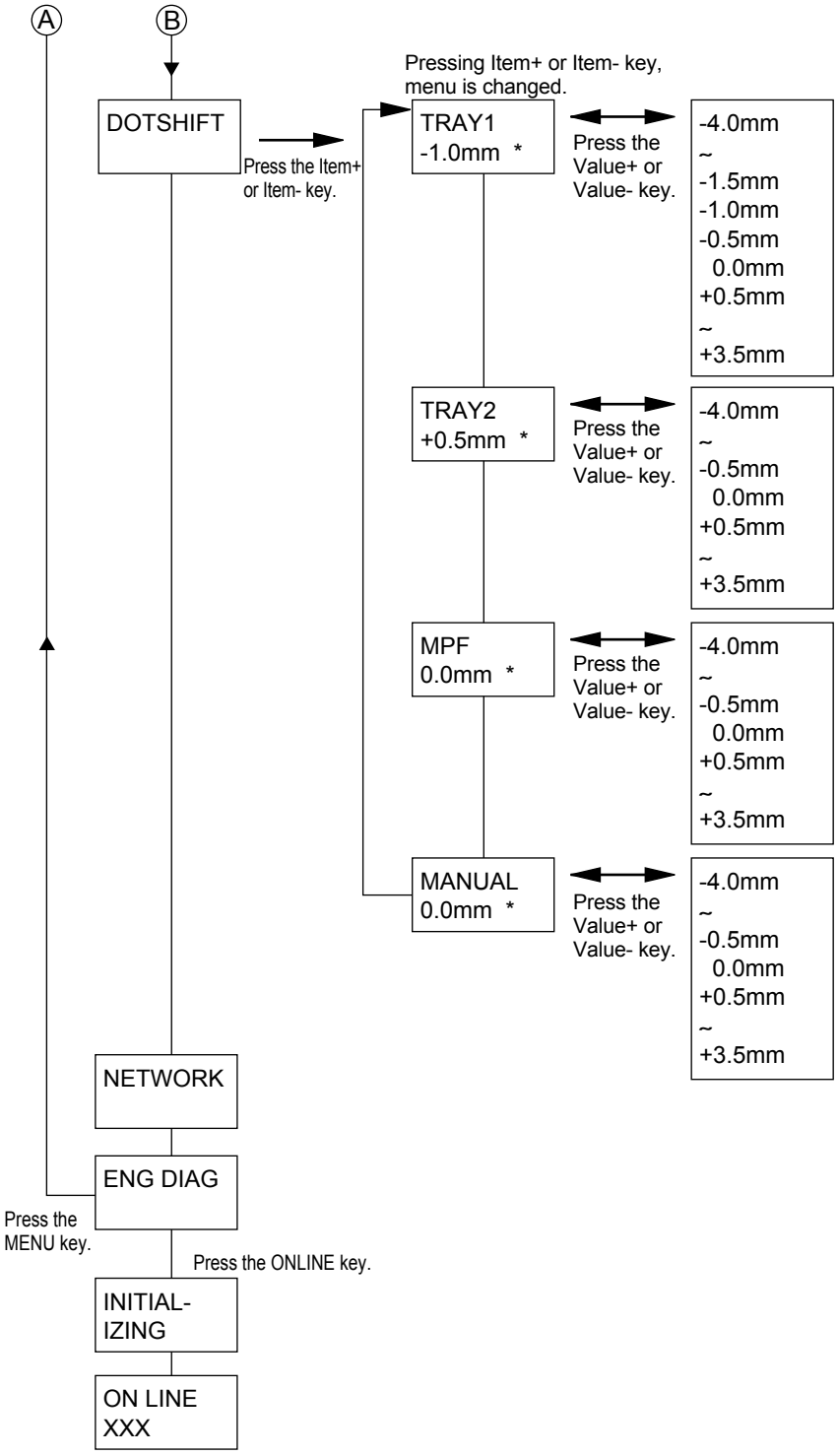
- The rolling ASCII pattern is printed continuously for various engine tests.
- Press the ON LINE key to cancel this mode.

(9) Network

(10) ENG DIAG

- This function can enter the Engine Maintenance Mode.


LCD display
OKIUSER
Press the Item+ or Item- key.
Press the Value+ or Value- key.
ODA *
OEL
APS
JP1
JPOEM1
JPOEM2
OEMA
OEML
Sets brands.
Selecting by the Value+ or Value- key.
If the Menu key is pressed menu change.
MAINTE MENU
Press the Item+ or Item- key.
FL FORMAT EXECUTE
Press the Select key.
INITIAL-IZING
Formats flash ROM.
EEPROM RESET
Press the Select key.
(Same as Power On.)
CONFIG MENU
Press the Item+ or Item- key.
CODESET TYPE1 *
Press the Value+ or Value- key.
CODESET TYPE2
Changes operater panel Type1 or Type2.
ENG STAT PRINT
Press the ONLINE key.
INITIAL-IZING
PRINTING XXX
Selecting by the Select switch, then pressing the On-line switch will prompt initialization and printing Engine information.
PAGE PRT ENABLE *
Press the Value+ or Value- key.
PAGE PRT DISABLE
Sets printing or not printing the total page count in PRINT MENU MAP.
Pressing Item+ or Item- key, menu is changed.
EMULATE
Press the Item+ or Item- key.
PCL ENABLE *
PCL DISABLE
IBM PPR ENABLE *
IBM PPR DISABLE
EPSONFX ENABLE *
EPSONFX DISABLE
PS3 EMU ENABLE *
PS3 EMU DISABLE
ESC/P ENABLE *
ESC/P DISABLE
PCL XL ENABLE *
PCL XL DISABLE
Changes the default PDL for each brand. PDLs that are disabled in this menu will not be displayed at EMULATE of User Menu or OP MENU of Admin Menu.
LOOPTEST
Press the Item+ or Item- key.
RS232C EXECUTE
Press the Select key.
LOOPTEST nnnnnn
Loop Test runs Serial I/F function test without connecting the host PC. This mode can be ended only by turning the power off.
CONT PRT EXECUTE
Press the Select key.
CONT PRT PRINTING
CONT PRT CANCELED
Rolling ASCII Continous Print
A
B


A
B
DOTSHIFT
Press the Item+ or Item- key.
Pressing Item+ or Item- key, menu is changed.
TRAY1
-1.0mm *
TRAY2
+0.5mm *
MPF
0.0mm *
MANUAL
0.0mm *
Press the Value+ or Value- key.
-4.0mm
~
-1.5mm
-1.0mm
-0.5mm
0.0mm
+0.5mm
~
+3.5mm
Sets dot shift in the horizontal direction.
NETWORK
ENG DIAG
Press the MENU key.
Press the ONLINE key.
INITIAL-
IZING
ON LINE
XXX

1.3 Engine Maintenance Mode

- To enter engine maintenance mode, enter system maintenance mode and press the Item+ key when "ENG DIAG" is displayed.
- This mode adopts the menu for function selection.
- The method for exit from this mode depends on the setting.
- The engine maintenance mode provides the following functions:

(1) Head Drive Time Setting

- Sets the drive time of the LED head.

(2) 600 x 1200 DPI strobe time

- Do not change the default setting.

(3) Printing Start Position Setting

- Sets the printing start position.

(4) Length Shift

(5) Dot Shift

(6) Drum Count Total Display

- Displays on the LCD the total number of drum revolutions of the unit, counted at the engine block.

(7) Drum Count Display

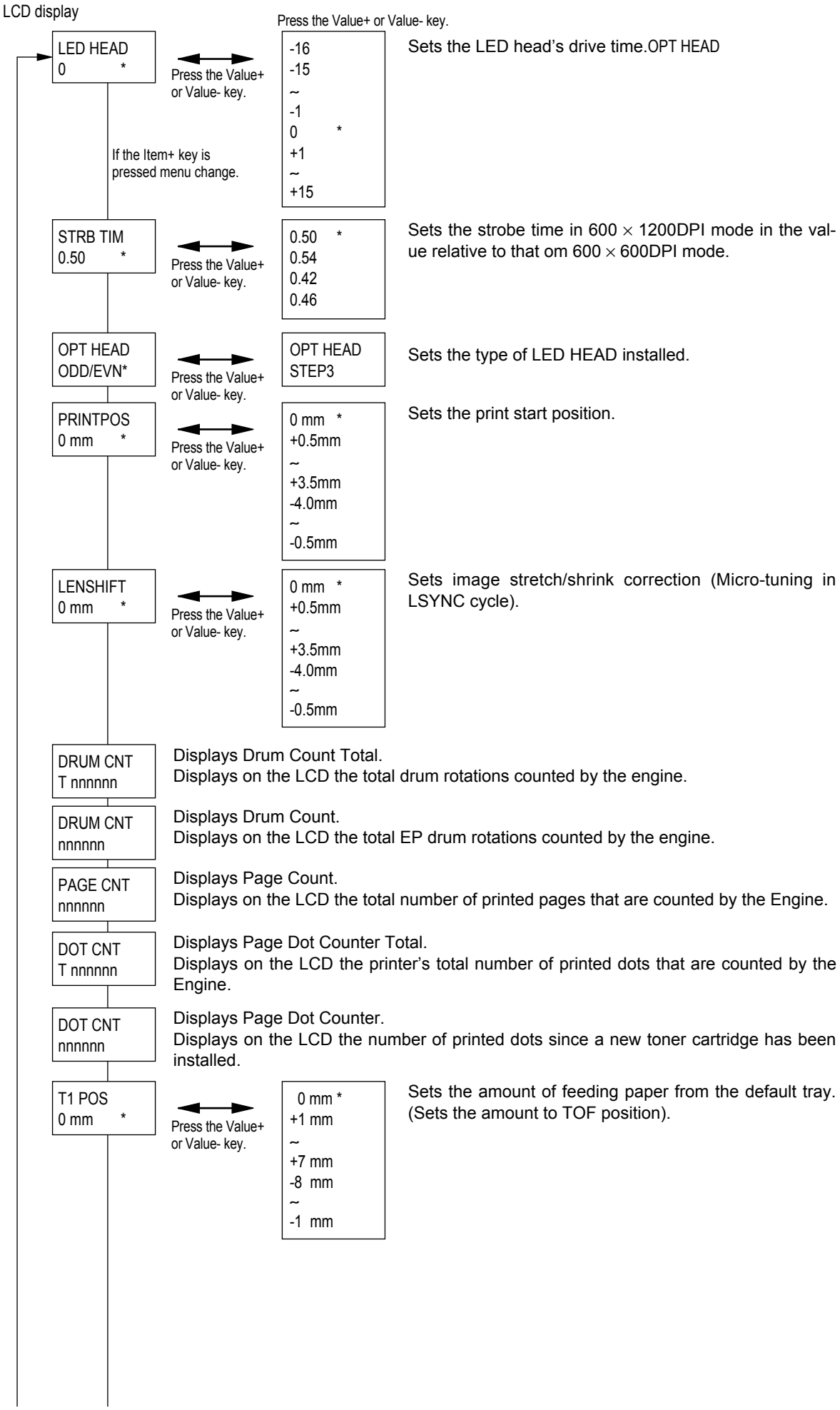
- Displays on the LCD the total number of EP drum revolutions counted at the engine block.

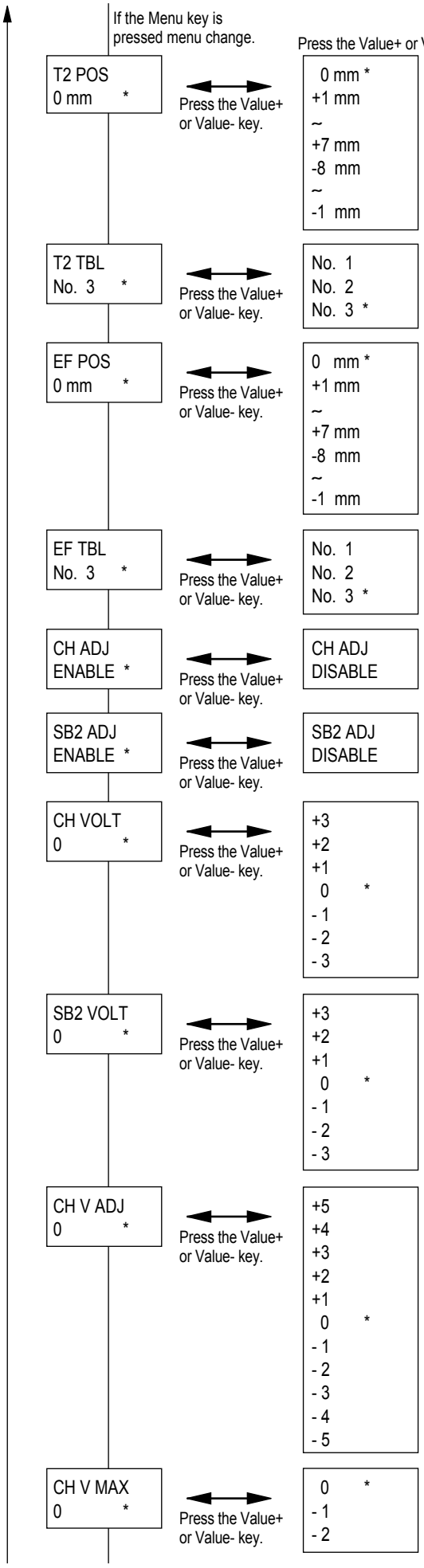
(8) Factory Adjustment (for High Capacity Second Paper Feeder/Power Envelope Feeder)

- Do not change the default settings since these are factory settings and were set at the factory.

(8) Engine Reset

- No items subjected to, All except counters are subjected to reset, As a common spec.


LCD display
Press the Value+ or Value- key.
LED HEAD
0 *
Press the Value+ or Value- key.
-16
-15
~
-1
0 *
+1
~
+15
Sets the LED head's drive time.OPT HEAD
If the Item+ key is pressed menu change.
STRB TIM
0.50 *
Press the Value+ or Value- key.
0.50 *
0.54
0.42
0.46
Sets the strobe time in 600 × 1200DPI mode in the value relative to that om 600 × 600DPI mode.
OPT HEAD
ODD/EVN*
Press the Value+ or Value- key.
OPT HEAD
STEP3
Sets the type of LED HEAD installed.
PRINTPOS
0 mm *
Press the Value+ or Value- key.
0 mm *
+0.5mm
~
+3.5mm
-4.0mm
~
-0.5mm
Sets the print start position.
LENSHIFT
0 mm *
Press the Value+ or Value- key.
0 mm *
+0.5mm
~
+3.5mm
-4.0mm
~
-0.5mm
Sets image stretch/shrink correction (Micro-tuning in LSYNC cycle).
DRUM CNT
T nnnnnn
Displays Drum Count Total.
Displays on the LCD the total drum rotations counted by the engine.
DRUM CNT
nnnnnn
Displays Drum Count.
Displays on the LCD the total EP drum rotations counted by the engine.
PAGE CNT
nnnnnn
Displays Page Count.
Displays on the LCD the total number of printed pages that are counted by the Engine.
DOT CNT
T nnnnnn
Displays Page Dot Counter Total.
Displays on the LCD the printer's total number of printed dots that are counted by the Engine.
DOT CNT
nnnnnn
Displays Page Dot Counter.
Displays on the LCD the number of printed dots since a new toner cartridge has been installed.
T1 POS
0 mm *
Press the Value+ or Value- key.
0 mm *
+1 mm
~
+7 mm
-8 mm
~
-1 mm
Sets the amount of feeding paper from the default tray. (Sets the amount to TOF position).



Sets the amount of feeding paper from the 2nd tray. (Sets the amount to TOF position).

Selects the download table for the 2nd tray.

Sets the amount of feeding paper from Multi Purpose Feeder. (Sets the amount to TOF position.)

Selects the download table for the Multi Purpose Feeder.

Sets CH's voltage setting adjustment logic Enable/Disable.

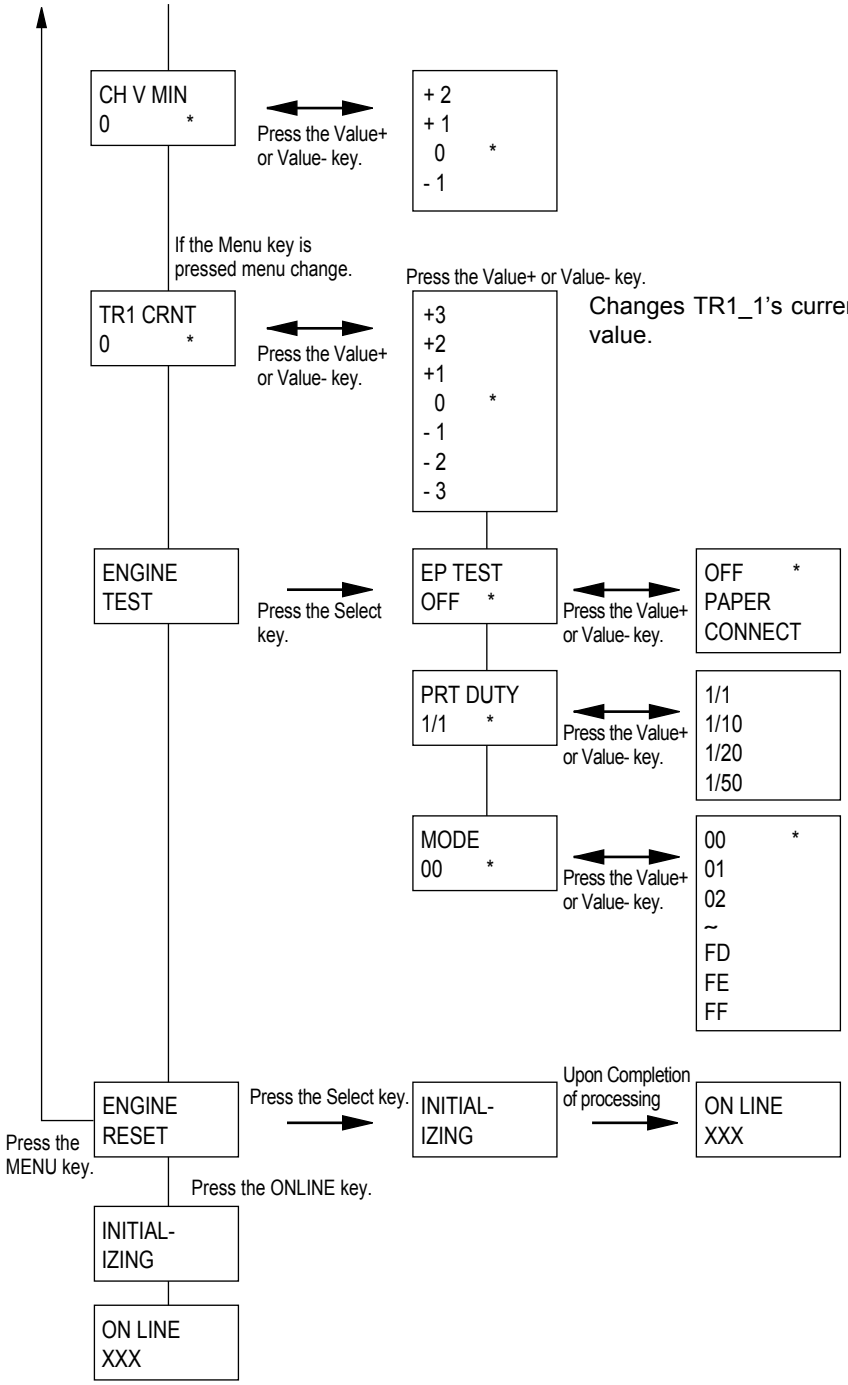
Sets SB2's voltage setting adjustment logic Enable/Disable.

Changes the CH's default voltage.

Changes the SB2's default voltage.

Changes the CHSUB's default voltage (for the drum rotations at 18PPM).

Changes the CHSUB's default voltage (for the drum rotations at 8PPM).


CH V MIN
0 *
Press the Value+ or Value- key.
+ 2
+ 1
0 *
- 1
If the Menu key is pressed menu change.
Press the Value+ or Value- key.
TR1 CRNT
0 *
Press the Value+ or Value- key.
+3
+2
+1
0 *
- 1
- 2
- 3
Changes TR1_1's current for reading the TR resistance value.
ENGINE TEST
Press the Select key.
EP TEST
OFF *
Press the Value+ or Value- key.
OFF *
PAPER
CONNECT
Sets continuous print for running print evaluation at factory.
PRT DUTY
1/1 *
Press the Value+ or Value- key.
1/1
1/10
1/20
1/50
Sets Duty for motor acceleration testing at factory.
MODE
00 *
Press the Value+ or Value- key.
00 *
01
02
~
FD
FE
FF
Used to start up Soft Logical analyze mode, etc. for engine debug mode.
ENGINE RESET
Press the Select key.
INITIAL-IZING
Upon Completion of processing
ON LINE XXX
Used in the Engine unit.
Press the MENU key.
Press the ONLINE key.
INITIAL-IZING
ON LINE XXX

APPENDIX G HIGH CAPACITY SECOND PAPER FEEDER

1. OUTLINE

1.1 Functions

The printer is mounted on top of this High Capacity Second Paper Feeder. The High Capacity Second Paper Feeder supplies paper automatically through the operation of pulse motor (hopping), which is driven by signals sent from the printer.
The main functions are the followings:

- Paper that can be used:

[Paper Type]
- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), Label sheets (PPC sheets); use of envelopes or thick paper is not possible.
- Cut sheet size: A4, A5, B5, Letter, Executive, Legal13, Legal14
- Special size: Paper width: 148 to 216mm
  Paper length: 210 to 355.6mm

[Weight]
- 16-lb to 24-lb (60 to 90 g/m^2)

- Paper setting quantity: 500 sheets of paper weighing 64 g/m^2

1.2 External View and Component Names

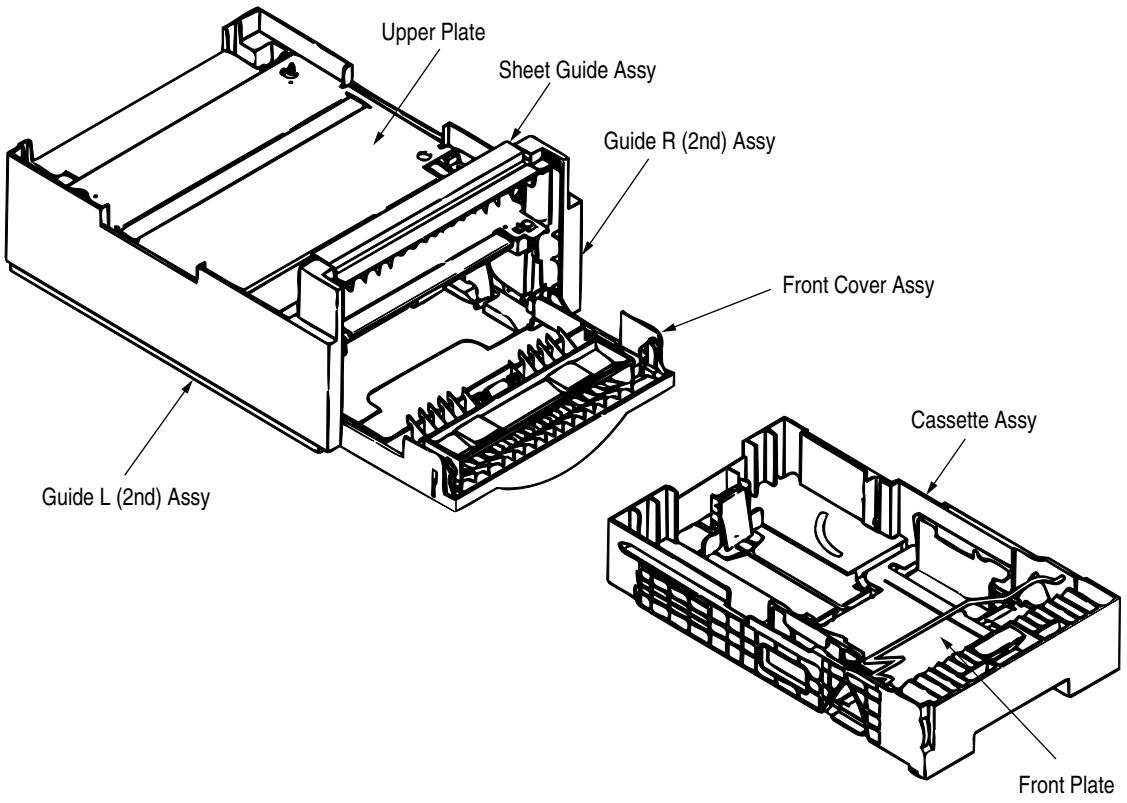


Figure 1-1 External View and Component Names

2. MECHANISM DESCRIPTION

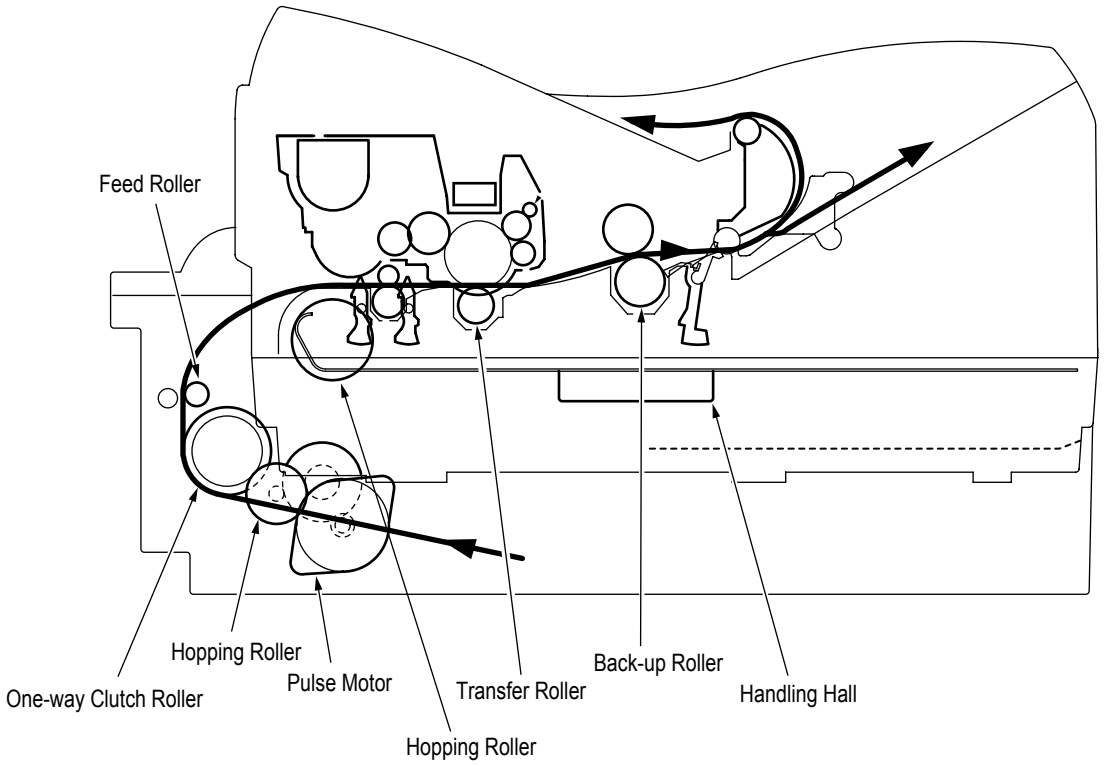
2.1 General Mechanism

The High Capacity Second Paper Feeder feeds the paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the High Capacity Second Paper Feeder, and this motion is transmitted to rotate the one-way clutch of the hopping frame assembly. The paper is delivered from the hopper into the printer through the turning of the hopping roller and feed roller.

Once delivered into the printer, the paper is then controlled and fed through by pulse motor (registration) of the printer.

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the paper being set, single sheet at a time. When the paper is loaded in the paper cassette, it is then transported by the pulse motor, carrying forward only a single sheet caught by the brake shoe at a time.



3. PARTS REPLACEMENT

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.

3.1 Precautions Concerning Parts Replacement

(1) Parts replacements must be carried out, by first turning the printer power switch off “O” and removing the printer from the High Capacity Second Paper Feeder.

(2) Do not disassemble the High Capacity Paper Feeder if it is operating normally.

(3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.

(4) Only specified service tools may be used.

(5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.

(6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.

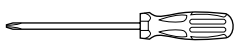
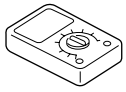
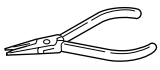
(7) When handling printed circuit boards, do not use any glove which may generate static electricity.

(8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools		Q’ty	Application	Remarks
1		No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2		No. 2-100 Philips screwdriver	1	3 ~ 5 mm screws	
3		No. 3-100 screwdriver	1		
4		Digital multimeter	1		
5		Pliers	1		

3.2 Parts Layout

This section describes the layout of the main components.

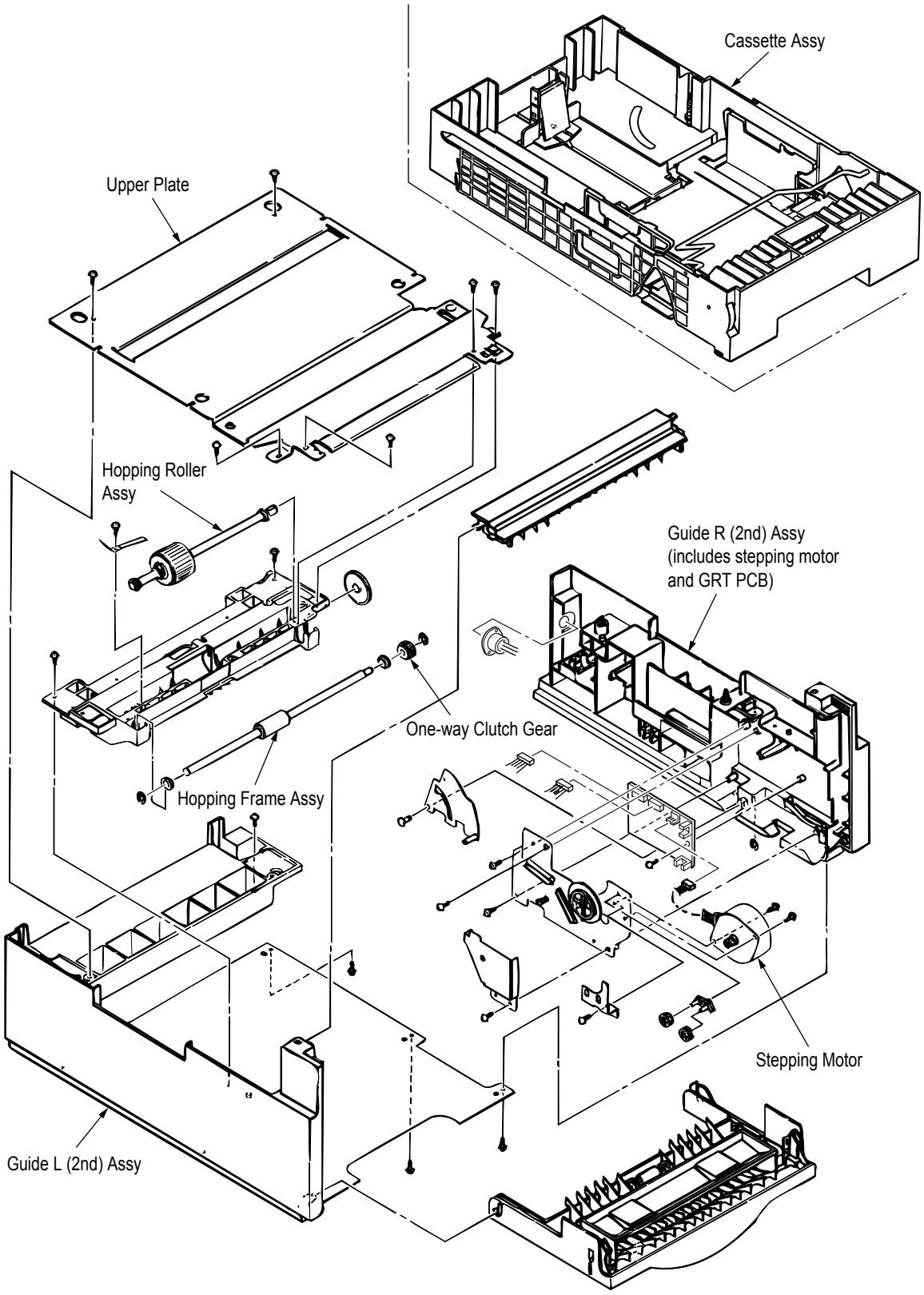
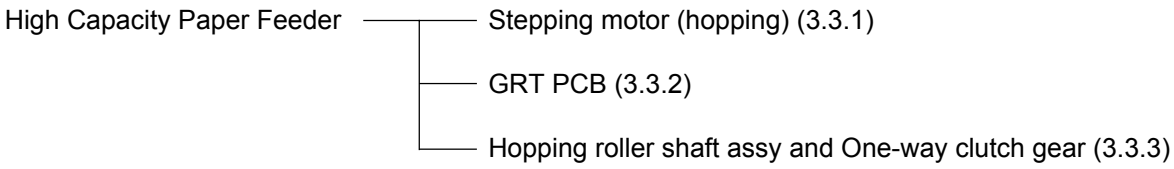


Figure 3-1

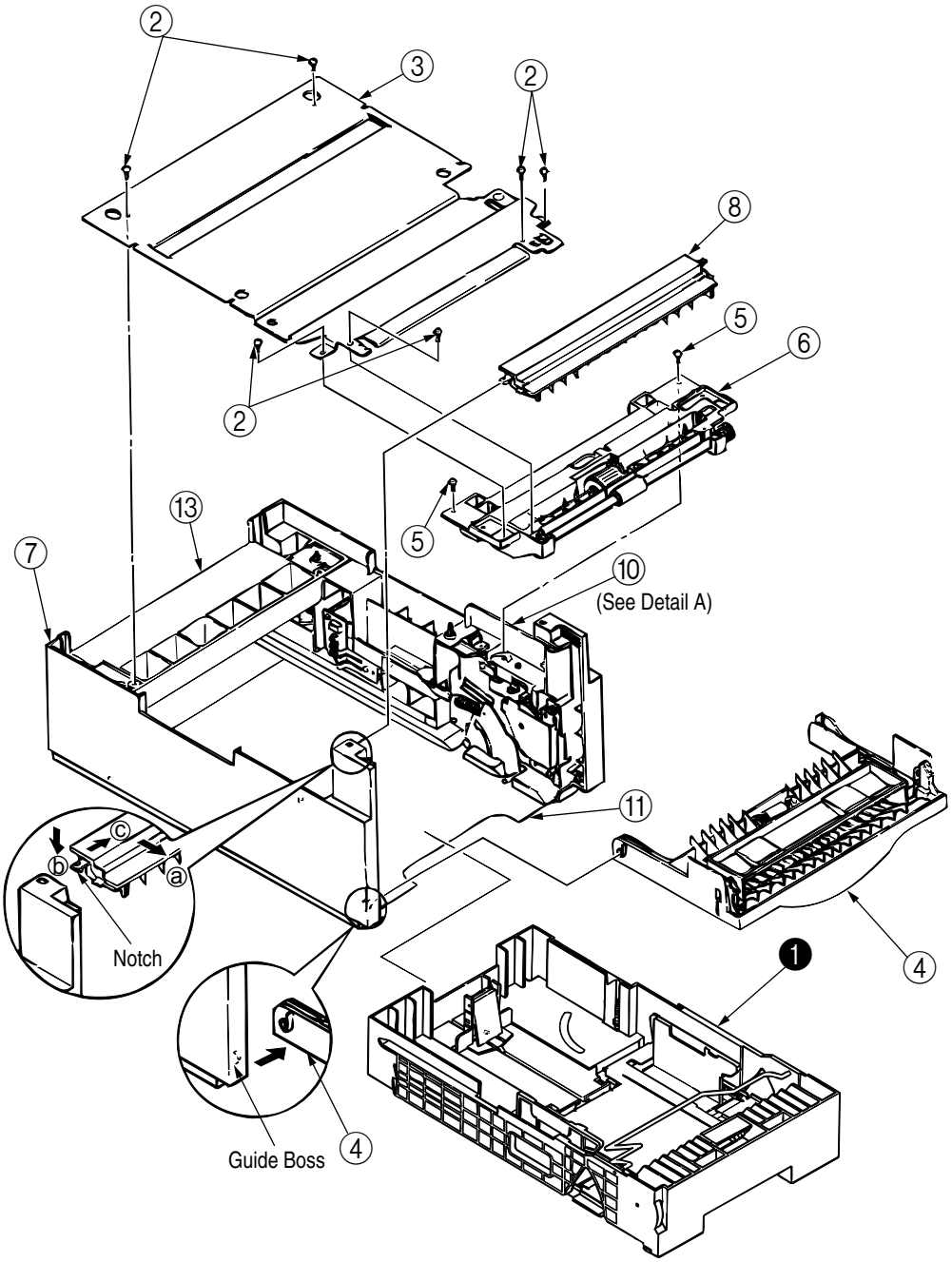
3.3 Parts Replacement Methods

This section describes the parts replacement methods for the components listed in the disassembly order diagram below.



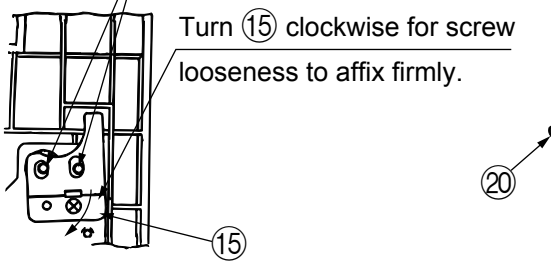
3.3.1 Stepping Motor (Hopping)

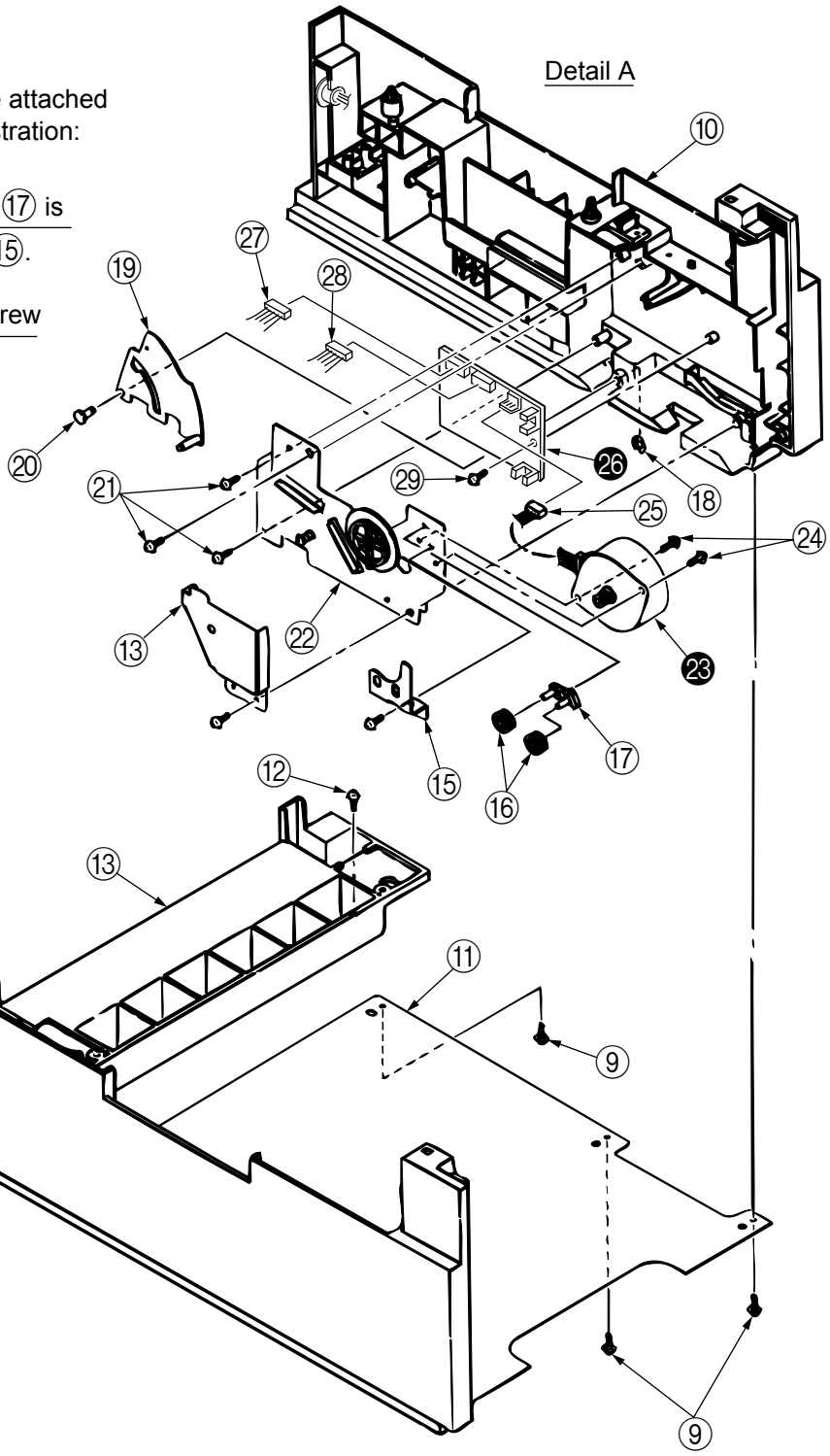
(1) Turn the printer power switch off, pull out the AC cord from the outlet. Remove the printer off High Capacity Second Paper Feeder.
(2) Take the paper cassette assy ❶ out of High Capacity Second Paper Feeder.
(3) Remove six screws ② and remove the upper plate ③. Remove two screws ⑤ and remove the hopping frame assy ⑥.
(4) Remove the front cover assy ④ off the guide boss on the guide L (2nd) assy ⑦ by bending the guide L (2nd) assy ⑦ in the direction of arrow shown in the magnified view below.
(5) Pull the sheet guide assy ⑧ in the direction of arrow ⓐ and also push in the direction of arrow ⓑ to unlock the notch, and bring the sheet guide assy ⑧ in the direction of arrow ⓒ to remove the sheet guide assy ⑧.



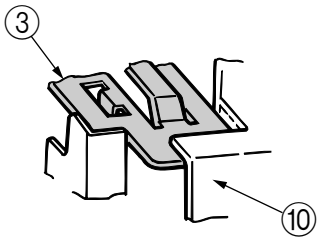
(6) Remove three screws ⑨ which are holding the guide R (2nd) assy ⑩ to the bottom plate ⑪. Remove the screw ⑫ which is keeping the rear cover ⑬ and guide R (2nd) assy ⑩. Remove the guide R (2nd) assy ⑩.
(7) Remove the protect (M) ⑭, guide bracket ⑮, planet gears ⑯ and planet gear bracket ⑰.
(8) Remove the E-ring ⑱ which is keeping the sheet link ⑲ on the guide R (2nd) assy ⑩, and pull out the hinge stand ⑳.
(9) Remove three remaining screws ㉑ which are keeping the motor on the motor bracket ㉒, and remove the connector off the Stepping Motor ㉓.
(10) Remove two screws ㉔ on the Stepping Motor ㉓.

Note : The guide bracket ⑮ must be attached as shown in the following illustration:





The upper plate ③ must be attached as shown in the following illustration.



3.3.2 TQSB-2 PCB

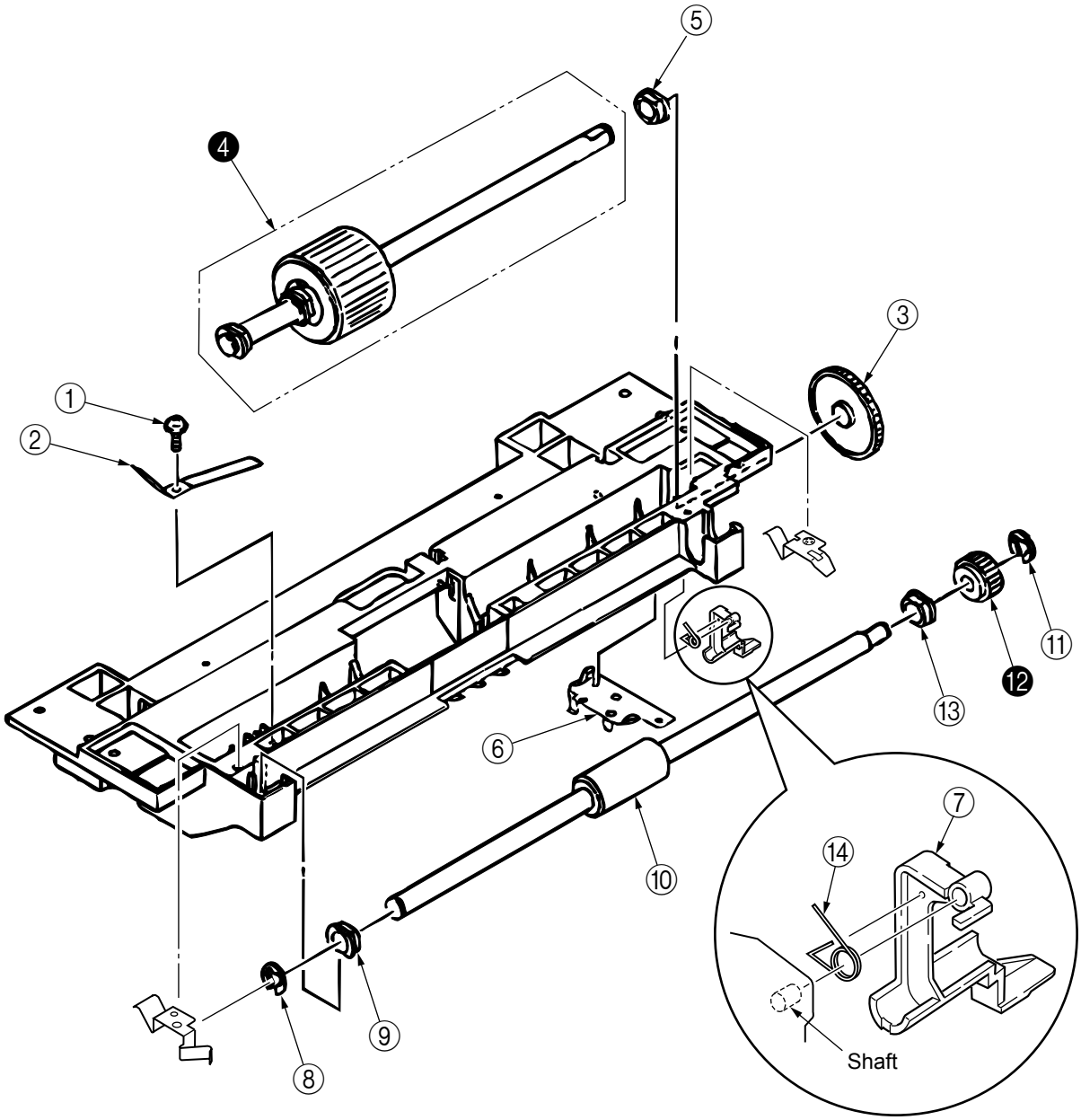
(1) Remove the pulse motor (see 3.3.1).
(2) Remove the connectors ㉗, ㉘ from the GRT PCB ㉖.
(3) Remove the screw ㉙ and remove the GRT PCB ㉖.

Note : Refer to Detall A in the previous page.

3.3.3 Hopping Roller Shaft Assy and One-way Clutch Gear

(1) Follow up to step (3) of 3.3.1 and remove the hopping frame assy.
(2) Remove the screw ① and remove the earth plate ②. Remove the sensor lever (T) ⑦ and remove the transion spring ⑭ and remove the ground plate ⑥. Remove the gear ③ and remove the metal bush ⑤ and hopping roller shaft assy ❹.
(3) Remove the E-ring ⑪ and remove the one-way clutch gear ⓬ on the right side of the feed roller ⑩.

Note : The metal bush ⑬ also comes off. Be careful not to lose it.



The tension lever and the sensor lever need concurrent replacing.

4. TROUBLESHOOTING

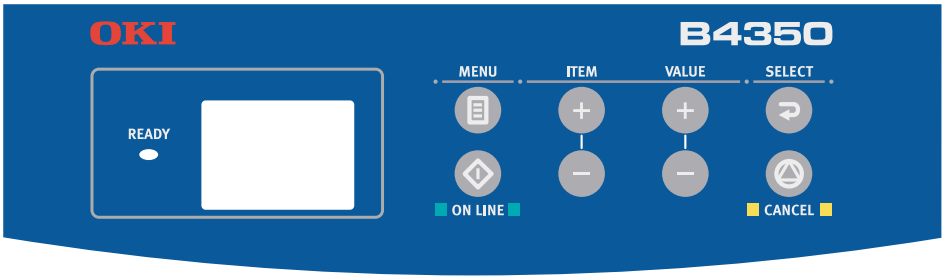
4.1 Precautions Prior to the Troubleshooting

(1) Go through the basic checking items provided in the Printer Handbook.
(2) Obtain detailed information concerning the problem from the user.
(3) Go through checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting

(1) Display on the Operator panel
The status of the problem is displayed on the LCD (Liquid Crystal Display) on the Operator panel. Go through the appropriate troubleshooting procedures according to the messages displayed on the LCD.

[For ODA



Status message display

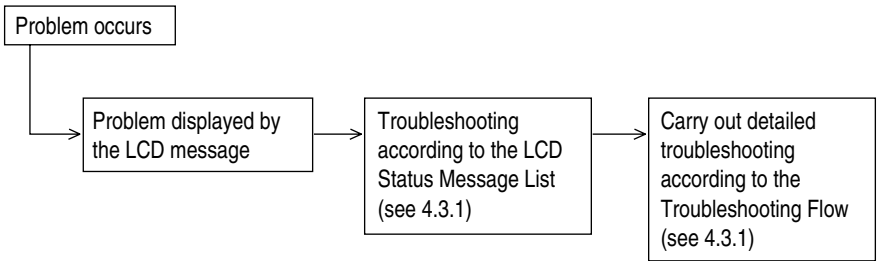
Ready LED display

■ : OFF ▨ : BLINKING

▩ : ON □ : Undefined

4.3 Troubleshooting Method

When a problem occurs, go through the troubleshooting according to the following procedure.


Problem occurs
Problem displayed by the LCD message
Troubleshooting according to the LCD Status Message List (see 4.3.1)
Carry out detailed troubleshooting according to the Troubleshooting Flow (see 4.3.1)

4.3.1 LCD Status Message List

The listing of the statuses and problems displayed in the form of messages on the LCD is provided in Table 4-1.

Table 4-1

Classification	LCD Status Message	Description	Recovery method
Jam error (feeding)	OPEN UPPER COVER PAPER JAM CHECK TRAY2 PAPER JAM	Notifies of occurrence of jam while the paper is being fed from High Capacity Second Paper Feeder. Scroll disply.	• Check the paper in the High Capacity Second Paper Feeder. Carry out the recovery printing by opening and closing the cover, and turn the error display off. • When the problem occurs frequently, go through the Troubleshooting.
Jam error (ejection)	OPEN UPPER COVER EXIT JAM	Notifies of occurrence of jam while the paper is being ejected from the printer. Scroll disply.	• Check the paper in the printer. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Paper size error	OPEN UPPER COVER PAPER SIZE ERROR	Notifies of incorrect size paper feeding from High Capacity Second Paper Feeder. Scroll disply.	• Check the paper in the High Capacity Second Paper Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Tray paper out	LOAD mmmm TRAY2 EMPTY mmmm : Papre size (A4, Letter, Legal, etc.)	Notifies of no paper state of the High Capacity Second Paper feeder. Scroll disply.	• Load the paper in High Capacity Second Paper Feeder.
Paper size request	CHANGE PAPER TO mmmm/pppp TRAY2 SIZE MISMATCH mmmm : Papre size (A4, Letter, Legal, etc.) pppp : Media Type (Plain, Transparency, etc.)	Notifies of correct paper size for the High capacity Second Paper Feeder. Scroll disply.	• Load the requested size paper in the High Capacity Second Paper Feeder.

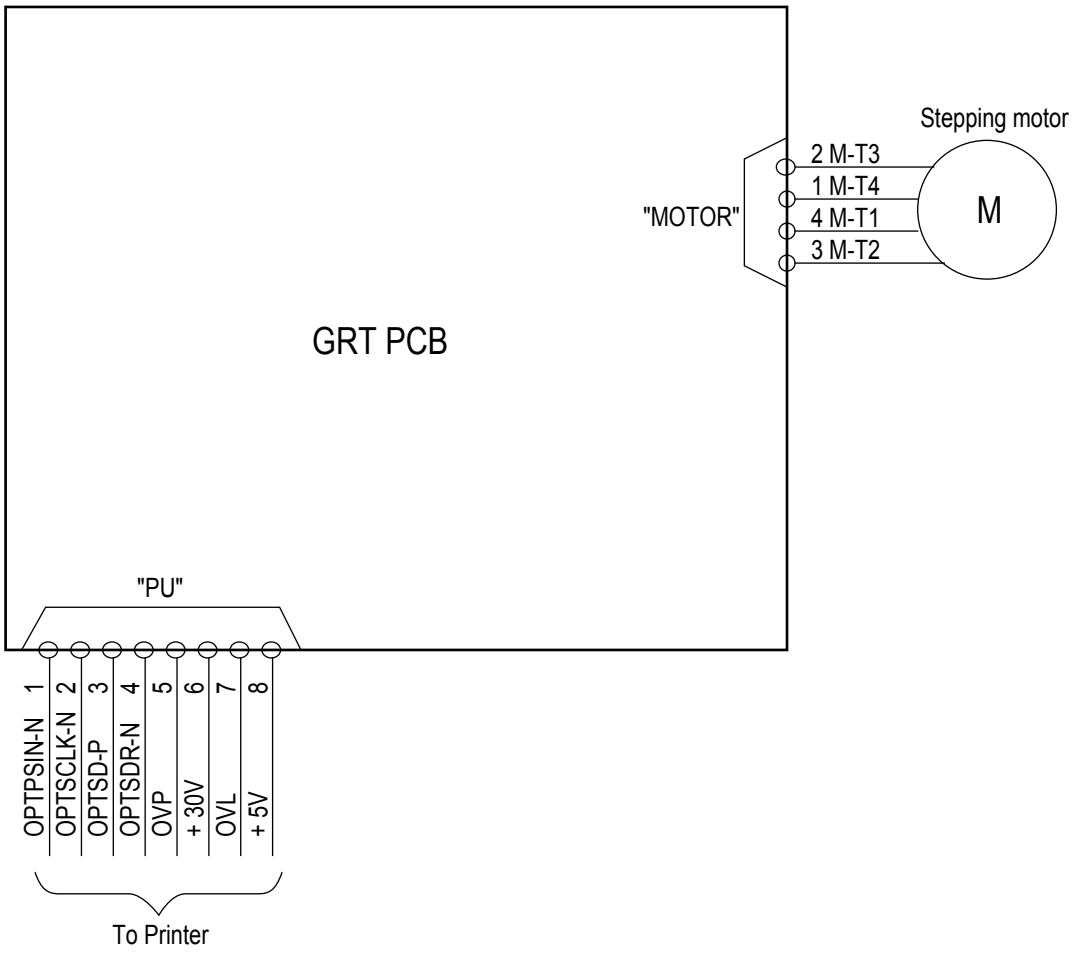
• (JAM error)

Paper Inlet Jam

- Does paper jam at the inlet when the power is turned on?
  - YES Is the paper located above the sensor plate (inlet)?
    - • YES Remove the paper.
  - NO Is the sensor plate (inlet) operating normally?
    - • NO Replace the sensor plate (inlet).
  - YES Replace the power supply/sensor board or inlet sensor.
- NO When the paper is fed in, does the paper inlet jam occur?
  - YES Is the paper being fed to above sensor plate (inlet)?
    - YES Is the sensor plate (inlet) operating normally?
      - • NO Replace the sensor plate. (inlet)
    - YES Clean the inlet sensor on the power supply/sensor board or replace the power supply/sensor board or inlet sensor.
  - NO Replace the hopping roller shaft assy or paper cassette.
- NO Are the hopping roller and feed roller rotating?
  - • YES Set the paper properly.
- NO Is the pulse motor turning?
  - • YES Replace the hopping roller shaft assy or one-way clutch gear on the feed roller assy.
- NO Is the connector being connected properly?
  - • NO Connect the connector properly.
- YES Check the coil resistance (approx. 4.3Ω) of the pulse motor.
  Is it normal?
  - • NO Replace the stepping motor.
- YES Replace the GRT PCB.

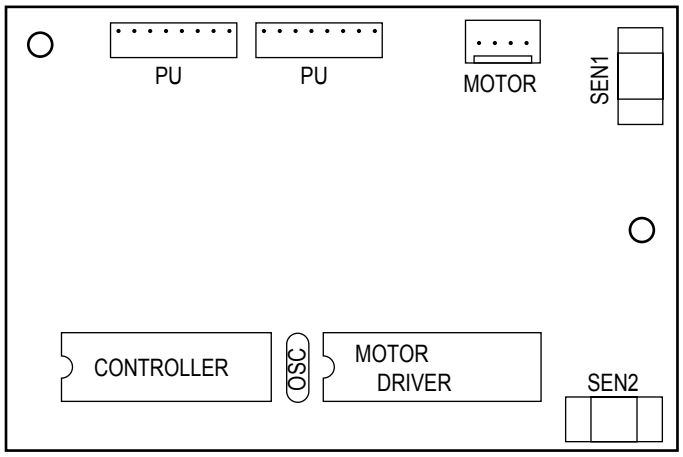
5. CONNECTION DIAGRAM

5.1 Interconnection Diagram



5.2 PCB Layout

GRT PCB



6. PARTS LIST

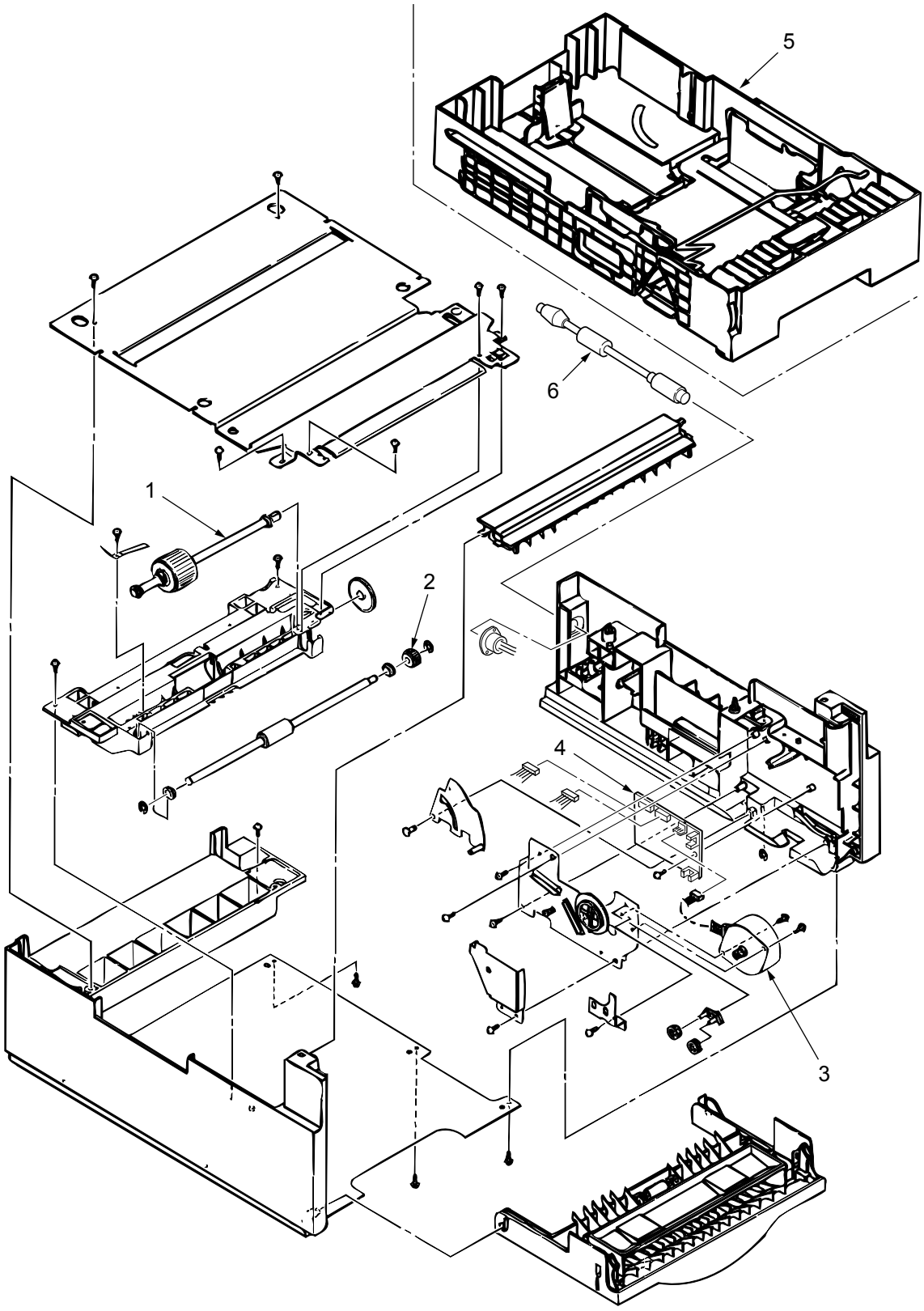


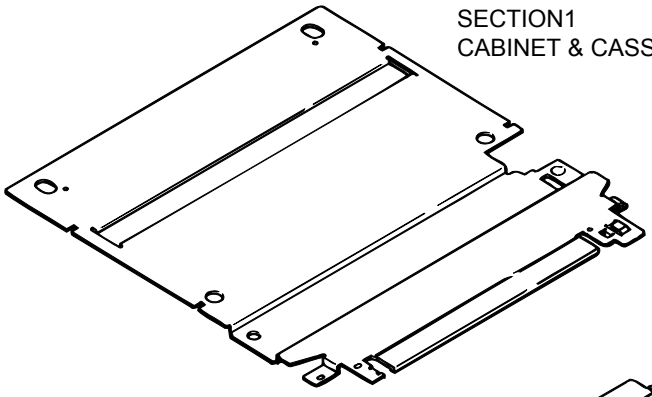
Figure 6-1 High Capacity Second Paper Feeder

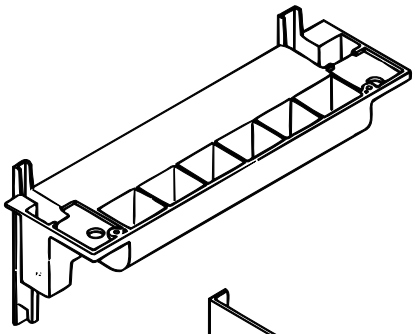
Table 6-1 High Capacity Paper Feeder

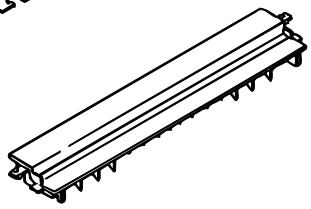
No.	Description	OKI-J Part No.	Q'ty	Remark
1	Hopping roller shaft assy	50409501	1	
2	One-way clutch gear	51401101	1	
3	Pulse motor	56512201	1	
4	GRT PCB	42372702	1	
5	Cassette assy (2nd tray)	50107304	1	
6	DIN8P-DIN8P Connector Cord	42372601	1	

2nd Tray ASSEMBLY

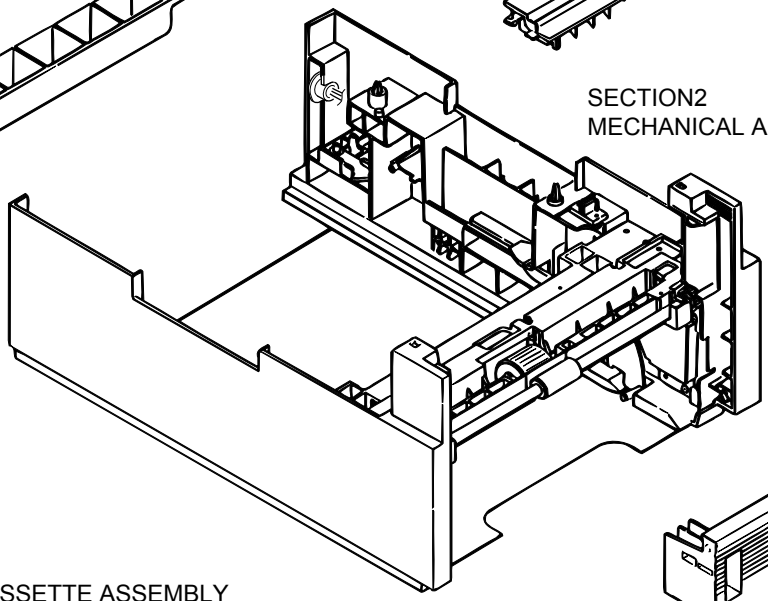
SECTION1
CABINET & CASSETTE ASSEMBLY

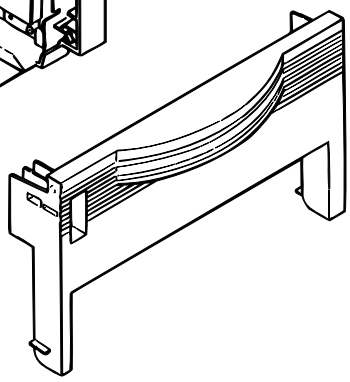




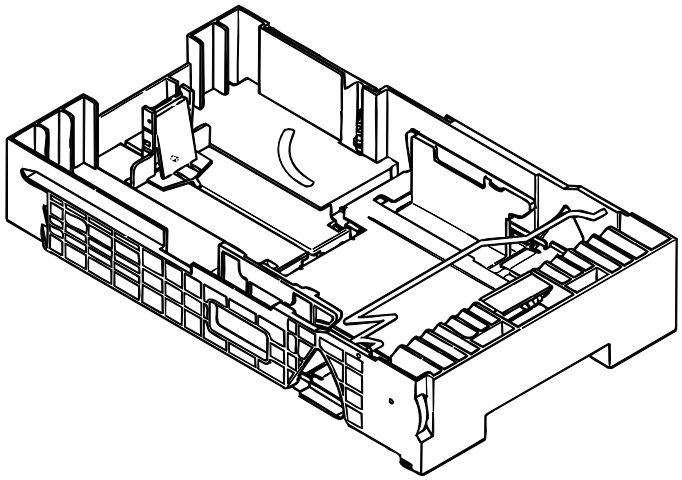


SECTION2
MECHANICAL ASSEMBLY

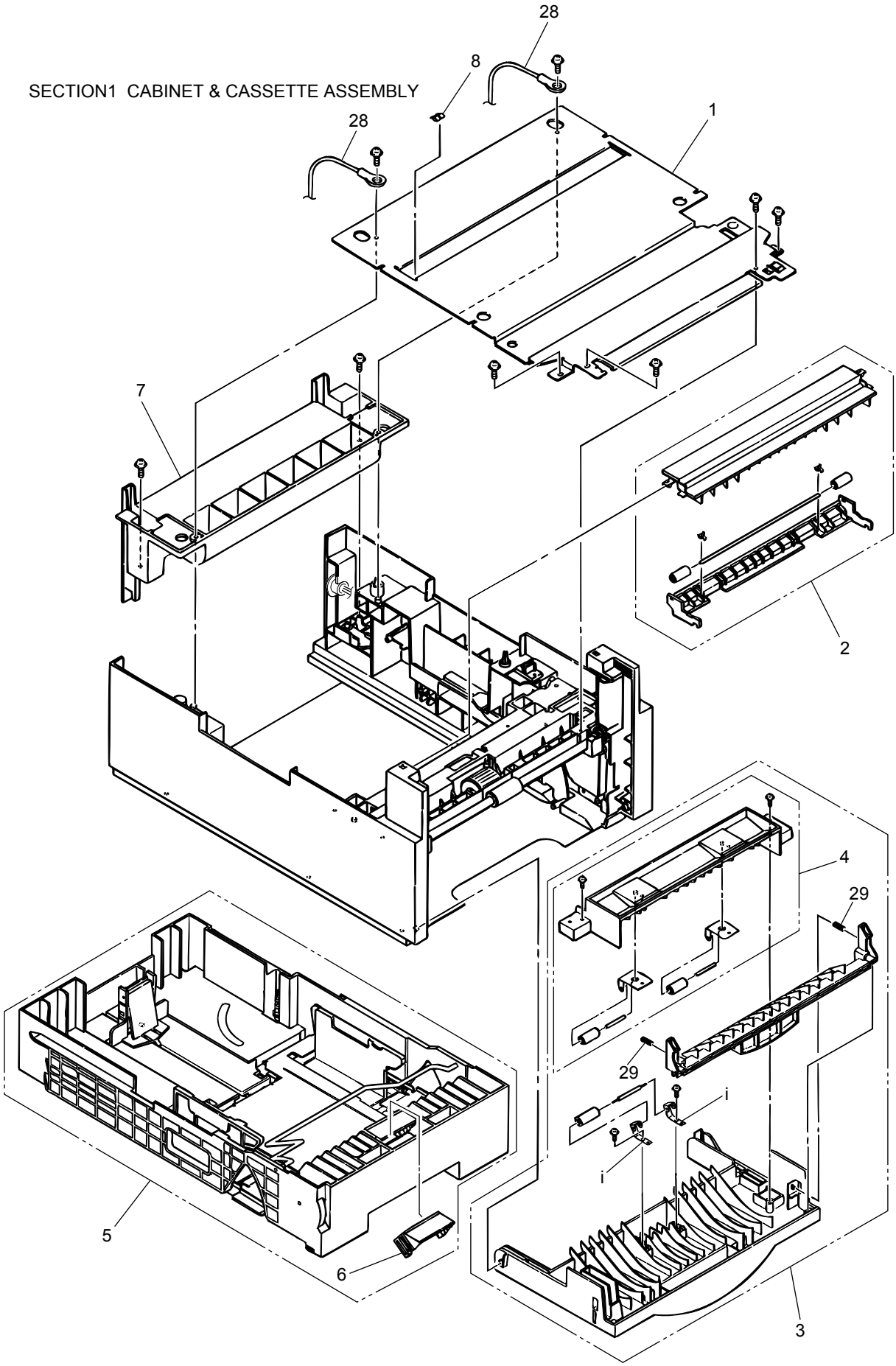




SECTION1
CABINET & CASSETTE ASSEMBLY



SECTION1 CABINET & CASSETTE ASSEMBLY



SECTION2 MECHANICAL ASSEMBLY

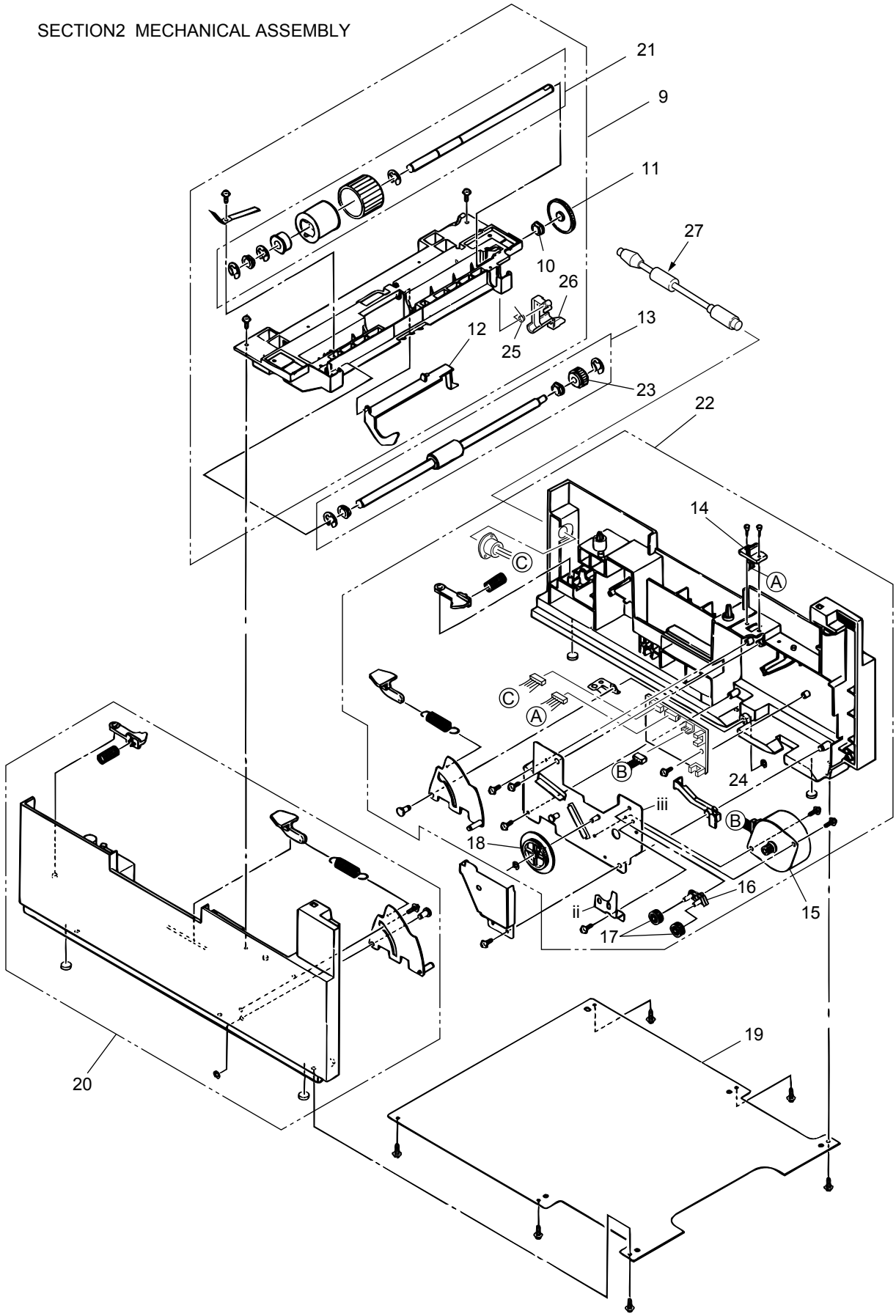
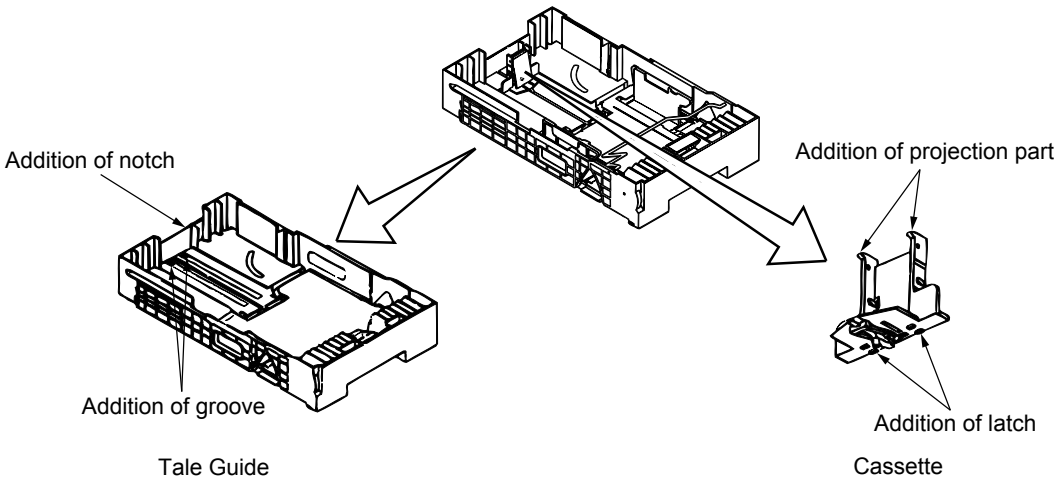


Table 6-2 2nd Tray Parts List

No.	Description	OKI Parts No.			
1	Plate, upper				
2	Sheet guide assembly				
3	Front cover assembly				
4	Inner guide assembly				
5	Cassette assembly (2nd tray)	50107304			
6	Separation frame assembly	53345801			
7	Cover, rear				
8	Stick finger				
9	Hopping flame assembly				
10	Bush, metal (ADF)				
11	Gear (z70)				
12	Lever, sensor (p)				
13	Feed roller assembly	50222501			
14	Cable & connector				
15	Stepping motor	56512201			
16	Bracket				
17	Gear (z24)				
18	Gear (z87/z60)				
19	Plate, bottom				
20	2nd cassette guide (L) assy				
21	Hopping roller assembly	50409501			
22	2nd cassette guide (R) assy	42337801			
23	One-way clutch gear	51401101			
24	Board GRT	42372702			
25	Spring, Tension	41804801			
26	Lever, sensor (T)	42372601			
27	DIN8P-DIN8P Connector Cord	42372601			
28	Connection Cord	40890502			
29	Spring-Release	41204801			

* For the rev. no. of the Parts List for the Front cover assembly should be applied No.6.
The No.6 includes a change of Release spring [P152, No.29]

** For the rev. no. of the Parts List for the Cassette assembly (2nd tray) should be applied No.10.
The No.10 includes a change of cassette and Tale Guide.



Note : Cassette and Tale Guide need concurrent replacing.

APPENDIX H NETWORK INTERFACE (OPTION)

1) Connector

- 8-pin modular jack

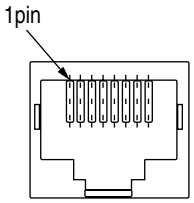
2) Cable

- 10BASE/T

3) Signal

Contact No.	Plug	Jack	Polarity
1	Power feeder3	–	+
2	Power feeder3	–	–
3	Send	Receive	+
4	Receive	Send	+
5	Receive	Send	–
6	Send	Receive	–
7	Power feeder2	Power feeder2	–
8	Power feeder2	Power feeder2	+

4) Appearance



5) Physical dimensions

a) Transmission method by CSMA/CD
b) Transmission protocol

Packet type	Support	Remarks
Ethernet II	○	
IEEE802.3	○	
IEEE802.3+IEEE802.2	○	
IEEE802.3+IEEE802.2+SNAP	○	

6) List of protocols

Protocol	Print	Configuration	Etc.
TCP/IP	LPR IPP FTP SMTP/POP3 HTTP(Except IPP)	HTTP Telnet FTP NetBEUI SNMP DHCP/BOOTP RARP AutoIP DNS UPnP SLP	TCP, IP, ICMP, ARP UDP
NetBEUI	SMB, CIFS	WINS	NetBIOS
NetWare	Q-Server over IPX Q-Server over IP R-Printer N-Printer	NCP SNMP	SPX, IPX, SAP, RIP
EtherTalk	PAP	NBP	ELAP, AARP, DDP, AEP, ZIP, RTMP, ATP

7) TCP/IP

a) Support OS
SunOS 4.1.1, SunOS 4.1.2, SunOS 4.1.3
Solaris 2.1, Solaris 2.2, Solaris2.4, Solaris2.5
HP-UX 9.X
Windows3.0+TCP/IP
Windows3.1+TCP/IP
Windows3.11+TCP/IP
Windows95/98
WindowsNT 3.5+TCP/IP
WindowsNT 3.5.1
WindowsNT 4.0
Windows2000
WindowsXP

b) LPR

The LPR is an application to process the print data.
The LPR of this system supports multiple clients. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
Number of clients connected	1 to 8 clients	1 to 8 clients	indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.

First command character	LPR option	Objective	Support
H	Specify by default.	Host name of the machine to which the LPR is called. Host name printed on the banner sheet	○
P	Specify by default.	Log-in name of the user having called the LPR. User name printed on the banner sheet	○
J	Specify by -J option.	Job name printed on the banner sheet Default: File name	○
C	Specify by -C option.	Job type printed on the banner sheet Default: System name	○
L	Specify by default. Cancel the specification by -h option.	Specify literal banner sheet printing.	○
f	Specify the number of volumes by -# option.	Name of the data file to be printed. The number of character strings of this command varies according to the number of volumes. (Not supported)	○
U	Specify by default.	Name of the file to be deleted with completion of printing	–
I	Specify by -i option.	Number of indent characters in the output line	–
W	Specify by -w option.	Specify page width.	–
M	Specify by -m option.	Specify sending of a mail with completion of printing	–
S	Specify by -s option.	Specify the symbolic link to the data file.	○
1/2/3/4	Specify by -1/-2/-3/-4 options.	Specify the font.	–

c) FTP

FTP is an application to process the print data.
The FTP of this system supports multiple of clients. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
Number of clients connected		1 to 8 clients	Indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.

d) Telnet

Telnet is an application to reference and change the menu of the Network/Printer.
The TELNET of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client. But it cannot provide two or more simultanepus connections for super users.

Item	Factory default	Setup range	Description
Number of connected clients		1 client	Indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.
Terminal mode	VT-100	VT-100	Indicates the control mode of the terminal of the connected client. Only the VT-100 alone is the support terminal mode.
Number of columns	80 columns	80 columns	Indicates the number of the digits of the terminal of the connected client. The number of the support digits is fixed at 80.
Number of rows	25 rows	25 rows	Indicates the number of the digits of the terminal of the connected client. The number of the support digits is fixed at 25.
Expiration of idle time	300 sec.	60 to 7200 sec.	Indicates the time when the idle time of the connected clients expires.

e) HTTP

The HTTP is an application to reference and change the menu of the Network/Printer.
The HTTP of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
HTTP Version	1.0	1.0	Indicates the version of the HTTP being implemented.

f) SNMP

SNMP is an application to reference and change the menu of the Network/Printer.
The SNMP of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client.

8) Netware

a) Support OS
Netware File Server 2.2C, 3.X,4.X,5 (Bindery Model/ NDS support)

b) R-printer
The R-printer is an application to process the print data.
The R-printer of this system supports multiple print serves. Furthermore, it provides one connection for one printer server; it does not allow multiple connections for one printer server.

Item	Shipment from factory	Setup range	Description
Number of connected print serves		1 to 8 servers	"Indicates the number of print servers which can be connected simultaneously. Each print server need not be started in advance. Even when the printer is ready for operation, connection is achieved only by starting the print server."
Print Server Name	OIxxxxxx Etherxxxxxx	Maximum four servers *Maximum 31 characters	Indicates the name of the connected print server. Each print server name can be registered up to a maximum of 31 characters. The default xxxxxx of the print server name is set to the lower three bytes of the MAC address of the print server. Overseas: OIxxxxxx OEM: Etherxxxxxx The print server name must be preset on a NetWare server using a Novell tool.
Printer Name	(Print Server Name)-prn1		Takes the form of the above server name followed by -prn1, by default.
Job Time out	10	4-255 seconds	A timeout value that functions only when a specific size job is received.

c) Q-Server

The Q-Server is an application to process the print data.

The Q-Server of this system supports multiple file serves. Furthermore, it allows connection of multiple print servers for one file server.

Item	Shipment from factory	Setup range	Description
Number of connected print serves		1 to 8 servers	Indicates the number of print servers which can be connected simultaneously. Each print server need not be started in advance. Even when the printer is ready for operation, connection is achieved only by starting the print server.
Print Server Name	OIxxxxxx Etherxxxxxx	Maximum four servers *Maximum 31 characters	Indicates the name of the connected print server. Each print server name can be registered up to a maximum of 31 characters. The default xxxxxx of the print server name is set to the lower three bytes of the MAC address of the print server. Overseas: OIxxxxxx OEM: Etherxxxxxx The print server name must be preset on a NetWare server using a Novell tool.
Printer Name	(Print Server Name)-prn1		Takes the form of the above server name followed by -prn1, by default.
File Server Name	NULL	Maximum four servers *Maximum 47 characters	Entered with the name of a connecting file server. The file server is that whose settings have been set using a Novell tool. The entry of this file server name is optional. When the field is left blank, SoftNIC can automatically discover and connect a file server to connect to.
Password for File servers	NULL	Maximum 31 characters	Entered with a password for the connection to a file server. The password must be preset on a NetWare server using a Novell tool. When this field, which is optional, is left blank, no password is used for connection to a file server. In such cases, the password for the file server must not be set on the file server.
Job Polling Rate	4	2-255 seconds	Specified with a time interval for checking whether a job occurs. When this field, which is optional, is left blank, the default four seconds takes effect.

9) EtherTalk

a) Support OS
System7.0, 7.1, 7.1.X
System7.5, 7.5.1, 7.5.2, 7.5.3, 7.5.5
MAC OS7.6, 8.X, 9

b) PAP
The PAP is an application to process the print data.

Item	Factory default	Setup range	Description
Number of connected clients	1 client	1 client	Indicates the number of clients which can be connected simultaneously. Simultaneous connection is possible up to one client.
Printer name	B4300	One item by max. 32 characters	Indicates the printer name which can be set on the printer.
Zone name		One item by max. 32 characters	Indicates the zone to which the printer belongs.

10) NetBEUI

a) Support OS
Windows95/98
WindowsNT4.0
Windows2000

b) NetBIOS

Item	Factory default	Setup range	Description
Host name	OLxxxxxx MLxxxxxx	1 to 15 characters	Indicates the NetBIOS Host name. OL: Overseas machines ML: Japan Domestic machines xxxxxx is the last six digits of the MAC address.
Work Group name	Print Server	1 to 15 characters	Indicates the NetBIOS Work Group name.

11) OKI Original Port

The OKI Original Port provides special processing which is beyond the scope of normal menu operation.

Item	Description
Initial recognition	Executes the processing of finding out the printer by the setup utility when the printer is connected to the network.
Flash Down Load	Provides download processing of the program for the flash ROM.
PJL command /response	Serves as a PJL port to send and receive the PJL command.

12) Others

a) Hot Protocol

The Hot Protocol provides a function of simultaneous meeting of requests for connection from multiple clients using different transport layer protocols.

b) Multi-user

The Multi-user provides a function of simultaneous meeting of requests for connection from multiple clients using the same transport layer protocol.

c) Permissible connection

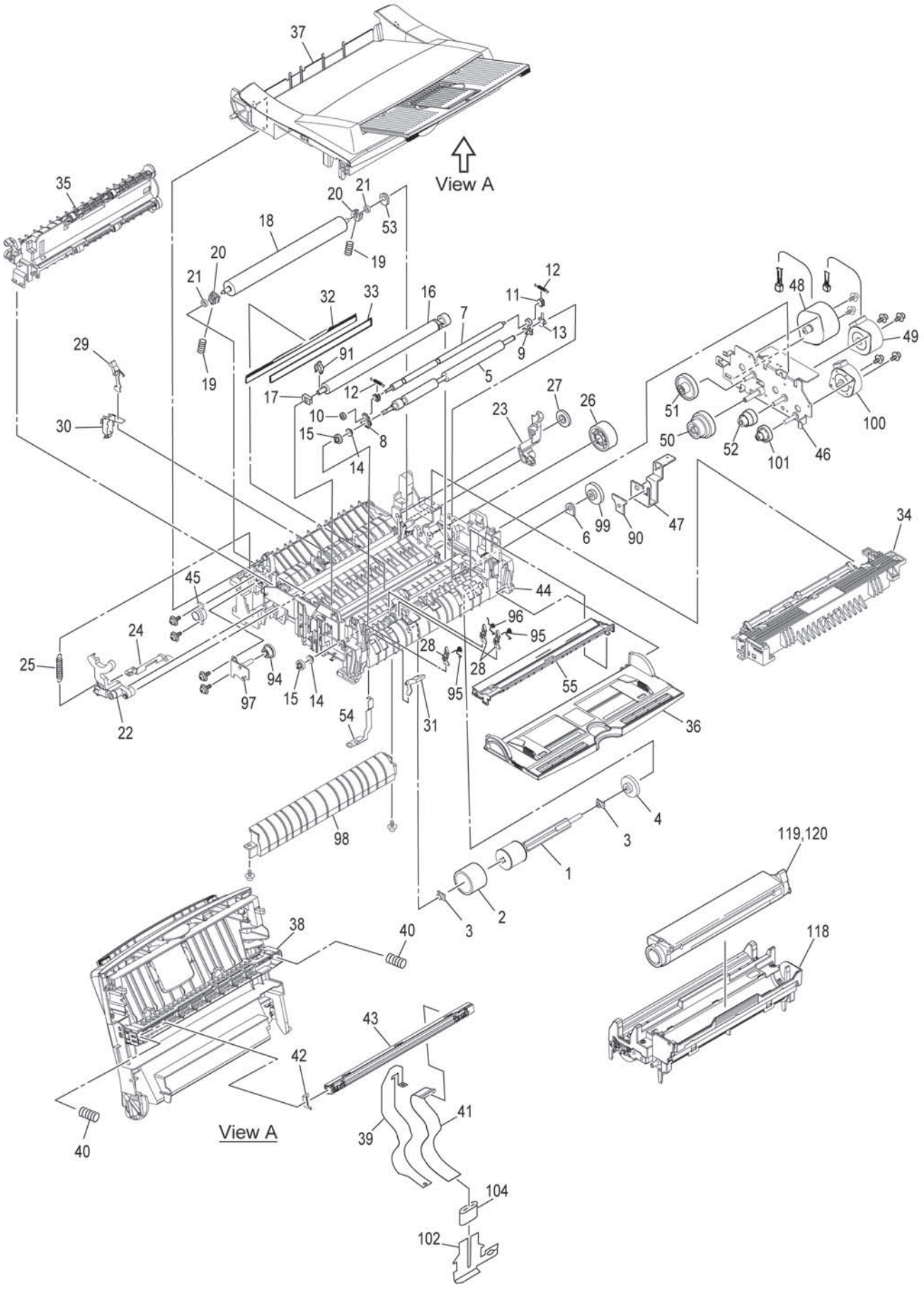
	Number of connections	Remarks
Total number of connections	10	
Number of connections for simultaneous use of management APs (Telnet, SMP, Web, OKI Original Port)	2	
Number of connections for simultaneous use of printing APs	8	

13) Setup

Each setup item can be set by the menu and network management tool.

Classification	Setup item	Menu change	Management tool change	Description
Common	Network valid/invalid	◯	◯	Valid/invalid for entire network
	Frame type	X	◯	Frame type for transmission and reception
TCP/IP	TCP/IP valid/invalid	◯	◯	TCP/IP valid/invalid
	IP address	◯	◯	
	IP subnet mask	◯	◯	
	Default gateway	◯	◯	
Netware	Netware valid/invalid	◯	◯	Netware valid/invalid
	Netware mode	X	◯	R-Printer/Q-server
	Network address	X	X	
	Q-server print server name	X	◯	
	Q-server connection file server name	X	◯	
	Q-server polling rate	X	◯	
	NDS Tree name	X	◯	
	NDS Context name	X	◯	
	R-Printer printer name	X	◯	
	R-Printer connection print server name	X	◯	
NetBEUI	NetBEUI valid/invalid	◯	◯	NetBEUI valid/invalid
	Net BIOS Host name	X	◯	
	NetBIOS Work Group name	X	◯	
AppleTalk	EtherTalk valid/invalid	X	◯	EtherTalk valid/invalid
	printer name	X	◯	
	Ether Talk zone nameSpecify by -1/-2/-3/-4 options.	X	◯	Name of the zone to which the printer belongs
	Ether Talk Printer name	X	◯	Name of the printer

B4350 (1/2)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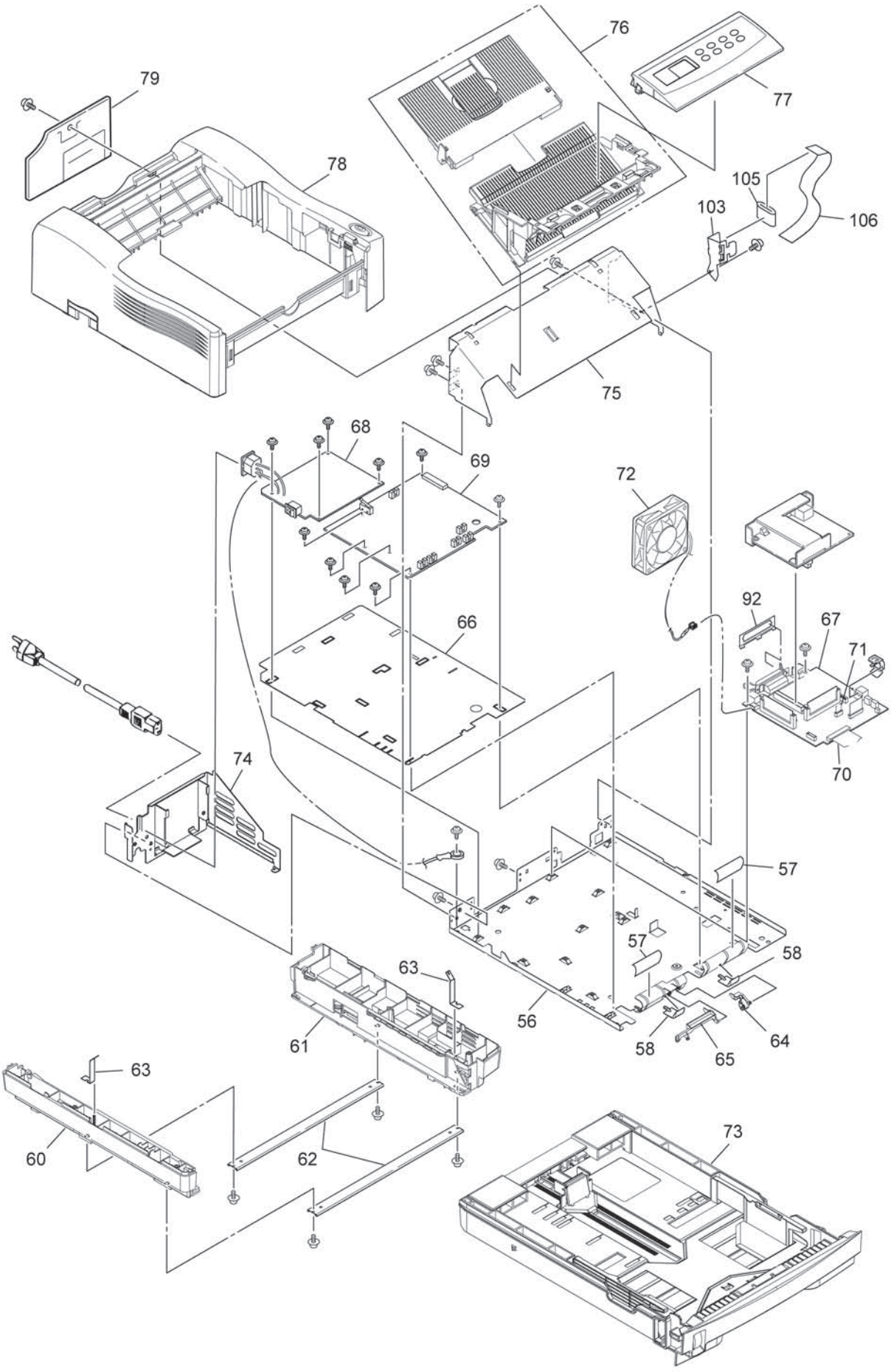
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No.	Parts No.	Name	Remarks
1	51112301	Hopping Roller Shaft	
2	53342401	Rubber-Hopping Roller	
3	51607402	Bearing	
4	51228901	One-way Clutch Gear	
5	42174301	Roller-Regist	
6	51607501	Bearing(Registration)	
7	42174201	Roller-Pressure	
8	41279501	Holder-Regist L	
9	41279601	Holder-Regist R	
10		Gear-Pressure	
11	41279401	Bearing-Pressure	
12	41281201	Spring-Tension	
13	41280401	Plate-Contact PA	
14	41279301	Bearing-Regist L	
15	41279701	Gear-Regist	
16	42208501	Roller Assy.-Transfer	
17	40438001	Bearing TR	
18	41301801	Roller-Back up	
19	41584101	Spring Bias	
20	41536201	Holder-BU	
21	41584201	Bearing-Ball	
22	42208601	Lever-Reset L Assy.	
23	50805901	Reset Lever R	
24	42551201	Arm-Switch	
25	50924201	Reset Spring	
26	42126101	Idle Gear	
27	51229201	Idle Gear	
28	51010701	Sensor Plate(Inlet)	
29	40771401	Lever-Eject Sensor Assembly	
30	41027701	Sensor Wire Assembly	
31	42468801	Toner Sensor(Adhesion)	
32	51010903	Diselectrification Bar Shaft	
33	52203802	Diselectrification Film	
34-a	42209201	Heat Assy	110V/120V
34-b	42209202	Heat Assy	230V
35	40772501	Roller Assy.-Eject	
36	42145701	Cover Assy.-Front	Beige
	42145703	Cover Assy.-Front	Black
37	42145801	Cover Assy.-Stacker	Beige
	42145802	Cover Assy.-Stacker	Black
38	42129101	Holder-Head	Beige
	42129102	Holder-Head	Black
39	42146701	Film-FG	
40	42146501	Spring-Head	
41	56639709	FUJI-CARD(24P)	
42	42146601	Contact-Head	
43	42266803	LED Head Unit-51MXF3	
44	42660001	Frame Subassy.-Lower	
45	42596601	Damper Oil	
46	42657501	Bracket-Motor(Caulking)	
47	42352501	Bracket-Sub-M	
48	42196001	Motor-Pulse(Main)	
49	42196101	Motor-Pulse(Regist)	
50	42121701	Gear-M3	
51	42121801	Gear-M2	
52	42121901	Gear-R2	
53	50517201	Washer C	
54	53347201	FG Plate OP	

No.	Parts No.	Name	Remarks
55	42209101	Guide-Paper R(Adhesive)	
56	42200501	Plate-Base Assy.	
57		Polyethylene Tape	L=90mm
58	40828301	Guide-Paper H	
59		CS-RING(CS3-SUS)	
60	42209401	Cassette guide L Assy.	Beige
	42209402	Cassette guide L Assy.	Black
61	42209501	Cassette guide R Assy.	Beige
	42209502	Cassette guide R Assy.	Black
62	51608801	Beam Plate	
63	51023601	FG Plate(bm)	
64	51019701	Sensor Plate(Paper Supply)	
65	51011501	Cassette Sensor Plate	
66	42146301	Insulator	
67	43006722	Board GRR-2	F/W Rev 2.25
68-a	41991601	Power Supply Unit	100V/110V/120V
68-b	42510301	Power Supply Unit	230V
69	42284101	Board-HLB	
70	56640903	Sumi-Card(30P)	
71	42101001	Cord Assy.(13p-5P,8p)	
72	42283501	Fan Motor	
73	42209604	Cassette Assy.-Paper	Beige
	42209605	Cassette Assy.-Paper	Black
74	42146201	Plate-Guide	
75	42146901	Plate-Shield	
76	42146801	Face Up Stacker Assy.	Beige
	42146802	Face Up Stacker Assy.	Black
77	42147010	Frame Assy.-OP Panel	Beige
	42147013	Frame Assy.-OP Panel	Black
78	42147201	Cover-Upper Assy.	Beige
	42147208	Cover-Upper Assy.	Black
79	42129601	Cover-IF	Beige
	42129602	Cover-IF	Black
90	42406701	Holder-Tr_R	
91		Spacer-Tr_L	
92	40771901	Plate-Earth_(CTR)	
93	42318001	Plate-Earth-ENV	
94	51252001	Damper-Gear	
95	42797101	Spring-Sensor_In	
96	41415801	Spring-Write-Sensor	
97	42679901	Plate-Damper(Caulking)	
98	42661401	Guide-Paper	
99	42657701	Gear-Reg(One-way)	
100	42658001	Motor-Pulse(Hopping)	
101	42657601	Gear-R2(Z58/20)	
102		Film-Support(Head)	
103		Film-Support(OP)	
104		Core	
105		Core	
106	42408001	FUJI-CARD(14P)	